

Proposed Final Outer Continental Shelf Oil and Gas Leasing Program for 1997-2002

August 1996

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Gulf of Mexico OCS Region	504-736-2947 or 1-800-200-GULF
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ABBREVIATIONS

ADV	- Adjusted Delayed Value
AEDP	- Area Evaluation and Decision Process
AEOT	- Average Evaluation of Tract
AEWC	- Alaska Eskimo Whaling Commission
AMCC	- Alaska Marine Conservation Council
AOGA	- Alaska Oil and Gas Association
API	- American Petroleum Institute
bbl	- Barrel
BBO	- Billion barrels of oil
BBOE	- Billion barrels of oil equivalent
Btu	- British thermal unit
COOGER	- California Offshore Oil and Gas Energy Resources Study
CZM	- Coastal Zone Management
CZMA	- Coastal Zone Management Act
DMROV	- Delayed Mean Range of Values
DOE	- Department of Energy
DOI	- Department of the Interior
EEZ	- Exclusive Economic Zone
EIS	- Environmental Impact Statement
EPA	- Environmental Protection Agency
ESPIs	- Environmental Studies Program Information System
FMV	- Fair market value
FR	- Federal Register
FWS	- Fish and Wildlife Service
FY	- Fiscal Year
GAEOT	- Geometric Average Evaluation of the Tract
GRASP	- Geologic Resource Assessment Program
IPAA	- Independent Petroleum Association of America
Mcf	- Thousand cubic feet
MMS	- Minerals Management Service
MROV	- Mean Range of Values
NAS	- National Academy of Sciences
NASA	- National Aeronautics and Space Administration
NEPA	- National Environmental Policy Act
NEV	- Net Economic Value
NOAA	- National Oceanic and Atmospheric Administration
NOIA	- National Ocean Industries Association
NRC	- National Research Council
NRDC	- Natural Resources Defense Council
OCS	- Outer Continental Shelf
OCSLA	- Outer Continental Shelf Lands Act
OPD	- Official protraction diagram
PRASS	- Petroleum Resources Appraisal Systems Software
PRESTO	- Probabilistic Resource Estimates-Offshore
SID	- Secretarial Issue Document
Tcf	- Trillion cubic feet

I. SUMMARY OF DECISION—PROPOSED FINAL 5-YEAR PROGRAM FOR 1997-2002

A. Introduction

Management of the Nation's offshore oil and gas resources is governed by the Outer Continental Shelf (OCS) Lands Act, which specifies the conditions under which the Secretary of the Interior grants rights to explore for, develop, and produce those resources. The Secretary has assigned the responsibility for implementing the basic requirements of the OCS Lands Act to the Minerals Management Service (MMS). The Act requires the Secretary to prepare an oil and gas leasing program that indicates a 5-year schedule of lease sales that he determines best meets the Nation's energy needs.

Section 18 of the Act requires that the 5-year program be prepared in a manner consistent with four main principles: (1) consideration of economic, social, and environmental values and the potential impact on marine, coastal, and human environments; (2) a proper balance among potential for environmental damage, discovery of oil and gas, and adverse impact on the coastal zone; (3) assurance of receiving fair market value; and (4) consideration of eight factors. These factors are (a) existing information on geographical, geological, and ecological characteristics of regions; (b) equitable sharing of developmental benefits and environmental risks among regions; (c) location of regions with respect to needs of energy markets; (d) location of regions with respect to other uses of the sea and seabed; (e) interest of potential oil and gas producers; (f) laws, goals, and policies of affected States; (g) relative environmental sensitivity and marine productivity; and (h) relevant environmental and predictive information. There is no set equation for the weight to be accorded each principle and factor, and it is within the Secretary's discretion after considering these matters to determine how best to proceed under the OCS Lands Act.

Release of the Proposed Final Program is the next-to-last step in the development of the 5-year program for 1997-2002. The Proposed Final Program and the analyses supporting it have been developed over a period of almost 2 years, beginning with an initial request for comments published in the *Federal Register* on November 16, 1994. The request for comments was followed by the Draft Proposed Program in July 1995 and the Proposed Program and draft Environmental Impact Statement (EIS) in February 1996. Each draft was preceded by consideration of comments, consultation with interested parties, and extensive analyses. Hearings on the draft EIS were held in seven locations, with teleconferencing to five remote locations in Alaska. During the preparation of the program, a new National Assessment of hydrocarbon resources also was completed, providing the latest estimates of undiscovered oil and natural gas resources on the OCS. These new estimates have been incorporated in the analysis.

The 5-year oil and gas program process and decisions fulfill both the letter and the spirit of section 18 of the OCS Lands Act by providing for environmentally responsible oil and gas leasing in selected prospective areas of the OCS where it appears there is sufficient industry interest, where neither the laws and policies of adjacent States and localities nor other uses of the sea and seabed are significant impediments to OCS program activity, and where there is agreement among interested and affected parties that consideration of leasing is reasonable within the 1997-2002 timeframe. Consensus-based decisionmaking, science-based decisionmaking, and the

use of natural gas as an environmentally preferred fuel are policy objectives endorsed by the President and the Secretary that this program also strives to achieve.

**B. New
Approach
to
Decision-
making**

The Department of the Interior's (DOI) emphasis on consultation and cooperation is reflected in the Proposed Final Program. This program is unique in its development from the bottom up and its grounding in the principle of working in partnership with affected parties to develop a reliable schedule of lease offerings so that the new program can serve as a framework for collaboration among parties. The Secretary has decided, for this program, to give greater weight to the following two OCS Lands Act section 18 criteria: (1) laws, goals, and policies of affected States and (2) location of regions with respect to other uses of the sea and seabed. He has concluded that any lesser weighting of these latter two criteria at this time would be counterproductive to long-term development of the OCS.

As part of the effort to develop a reliable schedule that can best meet the Nation's energy needs while not compromising other national needs and priorities as set forth in the OCS Lands Act, this program embraces the advice provided by the OCS Policy Committee, an independent body that advises the Secretary of the Interior. The Policy Committee's Subcommittee on OCS Legislation recommended that the Secretary, where local constituents were willing, use regional task forces representing all OCS program stakeholders to focus more on reaching consensus on OCS lease sales. Consistent with the Policy Committee's recommendation, the Alaska Regional Stakeholders Task Force was established to advise the Secretary on the Alaska OCS component of this 5-year program. The Task Force consisted of representatives of Federal, State, and local governments; Native, commercial fishing, subsistence, and environmental interests; industry and development communities; and coastal districts. The Task Force's report for the Policy Committee to the Secretary recommended five planning areas for leasing consideration. (A Task Force member from Greenpeace submitted as a supplement to the Task Force report a minority report stating that the majority report did not accurately reflect the high level of concern and strong opposition to OCS activity expressed by coastal residents throughout Alaska.) The Proposed Final Program is consistent with the recommendations of this Task Force.

Since the release of the Proposed Program, the Alaska Regional Stakeholders Task Force has endorsed its original recommendations on the 5-year program and identified the following three additional recommendations: (1) continue MMS efforts to incorporate traditional knowledge and expand analyses of effects to marine mammals, (2) continue to review existing spill prevention and response technology and develop incentives to encourage improvements where necessary, and (3) review existing mechanisms to compensate communities in the event of an oil spill and make recommendations for changes in law or regulations as necessary to expedite compensation. The MMS modified the final Environmental Impact Statement (EIS) for the 5-year program to incorporate traditional knowledge and expand discussions on marine mammal effects for proposed Alaska sale areas similar to changes made to the final EIS for Beaufort Sea Sale 144 as a result of the same type of concerns. Review and assessment of prevention and response technologies, industry operating practices, and level of compliance with requirements is a continuous process within MMS. The MMS revises regulatory requirements as necessary to recognize changes and advancements in technology, practices, and compliance. Through cooperative research, professional and trade forums, and through the MMS regulatory and enforcement program, the MMS also identifies and applies incentives for

improvements in technology and operating practices. While legal and regulatory mechanisms for compensation for damages due to oil spills are beyond the jurisdiction of the MMS, the MMS will alert those agencies with authorities on these issues and offer to work with these authorities to identify and develop solutions.

The OCS Policy Committee and the OCS Scientific Committee of the Minerals Management Advisory Board also established a Joint Subcommittee on Environmental Information for Select OCS Areas Under Moratoria to conduct an independent review and evaluation of areas under legislative and executive moratoria. The Subcommittee will assess environmental information and studies requirements in light of budgetary constraints, offshore oil and gas state-of-the-art technology, the offshore industry's environmental record, industry interest, and the nature of the potential hydrocarbon resources in the areas under review. The Subcommittee is focusing on issues for consideration in future programs and is expected to issue its report, which must be approved by both the Policy and Scientific Committees, in mid-1997.

**C. Context of
the
Proposed
Final
Program
Decision**

The development of this 5-year program considers, among other factors, competing uses of the OCS sea and seabed and the priorities States have accorded other uses of the resources in their coastal environments, as well as short-term and long-term national energy needs. Among the other uses analyzed are tourism and recreation, commercial fishing, vessel traffic, protection and preservation of marine and coastal resources in areas such as parks and sanctuaries, traditional hunting and fishing activities and subsistence lifestyles (by Alaska Natives), and nonenergy marine mineral development. Each OCS region faces a unique combination of such uses and of priorities placed upon them by adjacent States.

Analyses prepared for the Proposed Final Program showed that much of the Nation's energy for the foreseeable future will have to come from petroleum and that imports of crude oil, petroleum products, and natural gas all are expected to increase considerably over the next two to three decades. Increasing imports will make the Nation more vulnerable to supply disruptions and increase the Nation's balance of payments deficit.

Environmentally responsible development of OCS oil and gas resources will have to play a role in any effort to slow the increase in imported energy. Currently, the OCS accounts for about one-fourth of U.S. natural gas production and one-sixth of oil production. The undiscovered OCS resource base has the potential to make an even greater contribution to U.S. energy supplies in the long run. The OCS is believed to hold one-half of the undiscovered, conventionally recoverable oil and gas resources estimated to remain in this country. The MMS investigation of energy alternatives and market responses to a curtailment of OCS oil and gas leasing indicated that, in the long run, 86 percent of a loss of OCS oil production and 34 percent of reduced OCS gas production (on a Btu basis) would be replaced by oil imports.

The National Energy Policy Plan, entitled *Sustainable Energy Strategy*, presents the Clinton Administration's energy policy. The concept of sustainable development guides the energy policy process and motivates three strategic goals:

- Maximize energy productivity to strengthen the economy and improve living standards;

- Prevent pollution to reduce the adverse environmental impacts associated with energy production, delivery, and use; and
- Keep America secure by reducing vulnerability to global energy market shocks.

The environmentally sound development of the Nation's OCS resources, through a reliable lease sale schedule that is consistent with other uses of the OCS sea and seabed and with State and local government priorities, can help further the achievement of each goal.

Investments in and production of OCS oil and gas generate billions of dollars annually in bonuses, royalties, and taxes and create thousands of well-paying jobs throughout the American economy. Production of offshore resources under proper environmental safeguards poses less risk of major oil spills than does importing foreign oil in tankers. Expanded use of natural gas, including that produced on the OCS, has substantial environmental benefits over other fossil fuels.

While continued dependence on imported oil has national security implications, it is important to take a long-term view of this problem. First, even an aggressive lease sale schedule cannot eliminate the Nation's dependence on imported oil; effective use of OCS resources can only be one part of an overall approach. Second, aggressive scheduling of lease sales may actually result in reduced production if it ignores State and local concerns and provokes stronger opposition than would occur in response to a more cautious approach. Finally, the Nation will continue to need OCS resources well into the future, when low-cost oil supplies outside the control of the Organization of Petroleum Exporting Countries (OPEC) are expected to decline sharply. Currently the Nation benefits from relatively inexpensive oil imports from many producing nations, and this Administration's initiatives in brokering peace in the Middle East have produced positive results.

The Secretary has considered that his decision on the 5-year program for 1997-2002 will have a long-term effect on the success of this and future programs. Most production resulting from lease sales held under the new 5-year program is likely to begin over the first decade of the next century and continue for another 25 years. Just as important, the program decisions and the way they are made will have a lasting effect on the relationship between the Federal government and other interested parties and the ability to develop and implement future programs in a way that best meets the Nation's energy needs while protecting the values reflected in competing Federal, State, and local priorities.

D. Proposed Final Program: Schedule of Lease Sales

The options the Secretary has chosen for the Proposed Final Program are the same as those he chose for the February 1996 Proposed Program—except for the Beaufort Sea and Eastern Gulf of Mexico program areas, where he has chosen to modify the areas for leasing consideration. In the Beaufort Sea program area, the Secretary excluded the 416 blocks east of Barter Island that are farther from shore and encompass a major portion of the whale migration corridor. This would retain for leasing consideration a section of nearshore blocks that includes active OCS leases and is adjacent to State nearshore areas where future oil and gas sales are anticipated. The timing and location of the two lease sales proposed for the Beaufort Sea are summarized in table 1 and shown in map 1.

For the Eastern Gulf of Mexico, the Secretary decided to delete 22 whole or partial blocks within 15 miles of shore and add 384 deep-water blocks to the proposal. The nearshore deletion was requested by the Governor of Alabama, who stated in his July 30, 1996, letter that although there had been no measurable adverse impacts to the tourism industry on Alabama's Gulf coast directly attributable to the installation and operation of oil and gas exploration and production facilities in adjacent waters, he felt that this exclusion was necessary due to the widespread opposition of local residents, local governments, the local tourism industry, and the House of Representatives of the Alabama Legislature to the construction of any additional visible oil and gas structures. The 384-block addition was recommended by several industry commenters and would encompass all nearby existing deep-water leases in the Eastern Gulf. The Governor of Alabama recommended that the inclusion of these 384 blocks in the sale area be considered, and the addition would continue to recognize the Governor of Florida's request that no drilling occur within 100 miles of Florida's coast. The options selected for the Eastern Gulf of Mexico are summarized in table 1 and shown in map 2.

Table 1. Proposed Lease Sale Schedule

Region and Planning Area	Sale No.	Year	Proposed Activity
Alaska			
Beaufort Sea	170	1998	Small sale, focusing on nearshore blocks in center of program area (map 1)
	176	2000	Sale in program area (map 1)
Cook Inlet/Shelikof Strait	173	1999	Sale in program area (map 1)
Gulf of Alaska	179	2001	Sale in program area (map 1)
Chukchi Sea/Hope Basin	183	2002	Combined sale in program area (map 1)
Gulf of Mexico			
Western Gulf of Mexico	*	Annual	Sale in program area (map 2)
Central Gulf of Mexico	**	Annual	Sale in program area (map 2)
Eastern Gulf of Mexico	181	2001	Sale in program area (map 2) (15 miles off Alabama, 100 miles off Florida)

* Sale No. 168, 171, 174, 177, and 180

** Sale No. 169, 172, 175, 178, and 182

Alaska Region

The Proposed Final Program for 1997-2002 includes lease offerings in 5 of the 15 Alaska OCS planning areas—Beaufort Sea, Cook Inlet/Shelikof Strait, Gulf of Alaska, Chukchi Sea, and Hope Basin. Although there has been no production from the Alaska OCS, there is considerable production from State onshore and offshore

fields adjacent to some OCS sale areas, and industry is pursuing development of new discoveries. If they are indeed hydrocarbon prone, prospects in the Beaufort Sea and Chukchi Sea Planning Areas could hold vast quantities of oil. There is production from State lands and waters adjacent to the Beaufort Sea Planning Area, and the State of Alaska has plans for more leasing in State waters. During the last few years, it has held sales in Cook Inlet and the Beaufort Sea that included both onshore and offshore lands. There is industry interest in the Gulf of Alaska and in Cook Inlet. The State has opened the Yakutat area in the Gulf of Alaska for exploration licensing and has planned two lease sales for State waters in Cook Inlet. Hope Basin is not prospective by itself, but there may be interest in portions of the planning area in a combined sale with the Chukchi Sea Planning Area. These five planning areas were recommended for further consideration by the Alaska Regional Stakeholders Task Force. Many industry groups expressed interest in the Alaska OCS, and the State has been largely supportive of Federal leasing plans, consistent with State comments. Some local governments and organizations also support OCS leasing, subject to mitigation and certain restrictions. Other local communities, some Native groups, and some special interest groups oppose additional oil and gas activity on the Alaska OCS.

In response to concerns expressed in comments on the Proposed Program and at hearings on the draft EIS, 416 blocks east of Barter Island that are farther from shore and encompass a major portion of the whale migration corridor were excluded from consideration. This would retain for leasing consideration the nearshore area, which includes active OCS leases and is adjacent to State nearshore areas where future oil and gas lease sales and exploration are anticipated. The oil and gas resources in the area recommended for exclusion are considered uneconomic at the present time due to the lack of nearby infrastructure. Thus, this decision should both preserve the option to lease in the more prospective area located closer to anticipated nearshore activity and ameliorate most concerns about potential effects on subsistence values. This option would allow us to continue to study the included area for interaction of industrial activity and subsistence use. Furthermore, at the time of the sale, the area could be deferred. Continuing outreach efforts and work with communities, in combination with a flexible decisionmaking process may help to alleviate any concerns.

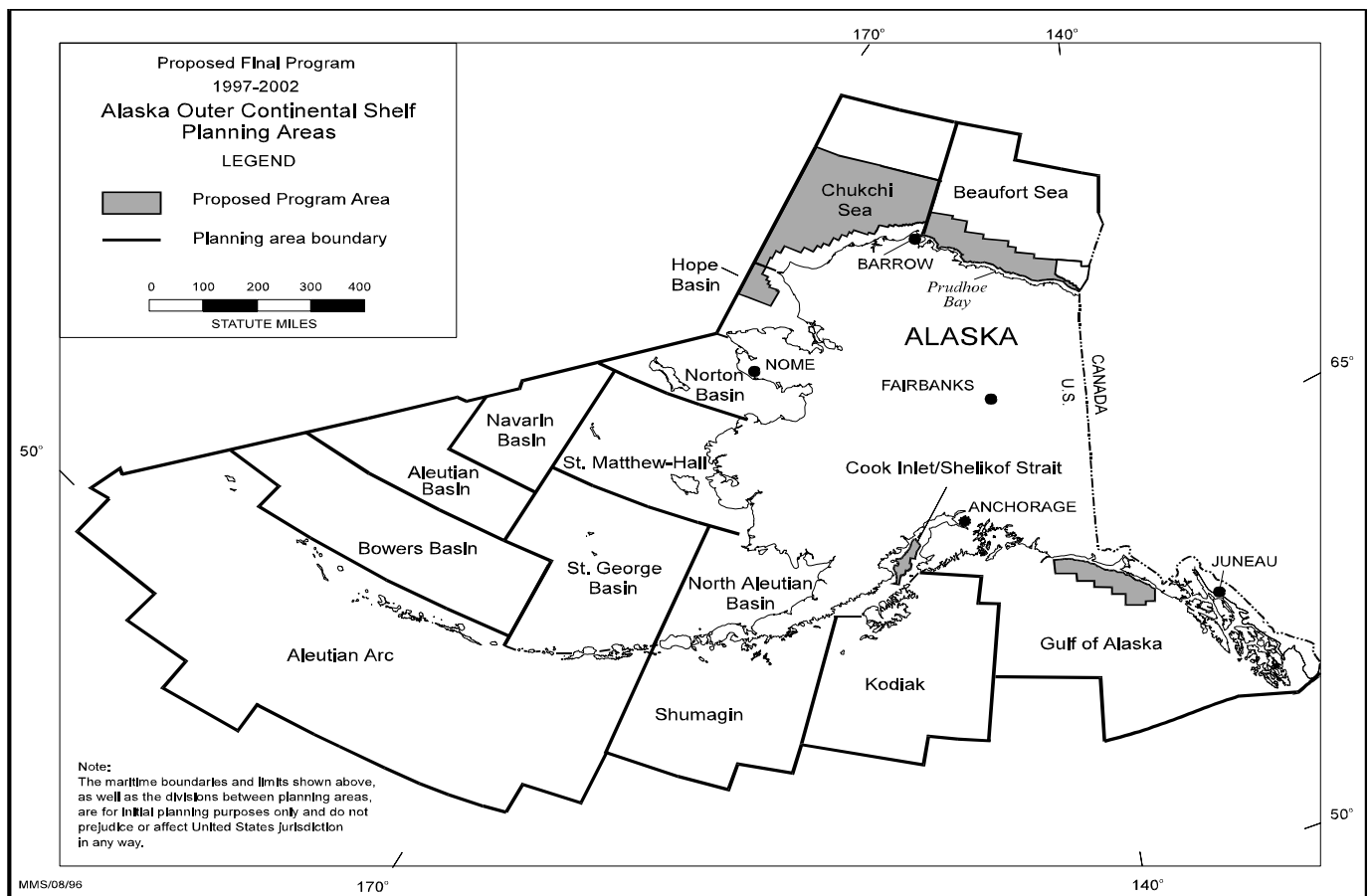
Gulf of Mexico Region

The Proposed Final Program includes annual areawide sales for the Central and Western Gulf of Mexico Planning Areas, as shown in table 1, to provide industry with the flexibility and the reliable schedule so important to long-term planning. The proposed Eastern Gulf of Mexico lease sale would cover blocks in a carefully crafted program area offshore Alabama and in the deep-water areas along the boundary of the Central Gulf of Mexico Planning Area. It recognizes the resource potential along the Central Gulf of Mexico and Eastern Gulf of Mexico Planning Areas boundary line and recognizes the importance of aesthetic values and related tourism to coastal residents and the State of Alabama. It also is consistent with Florida's continued opposition to activity within 100 miles of its coast.

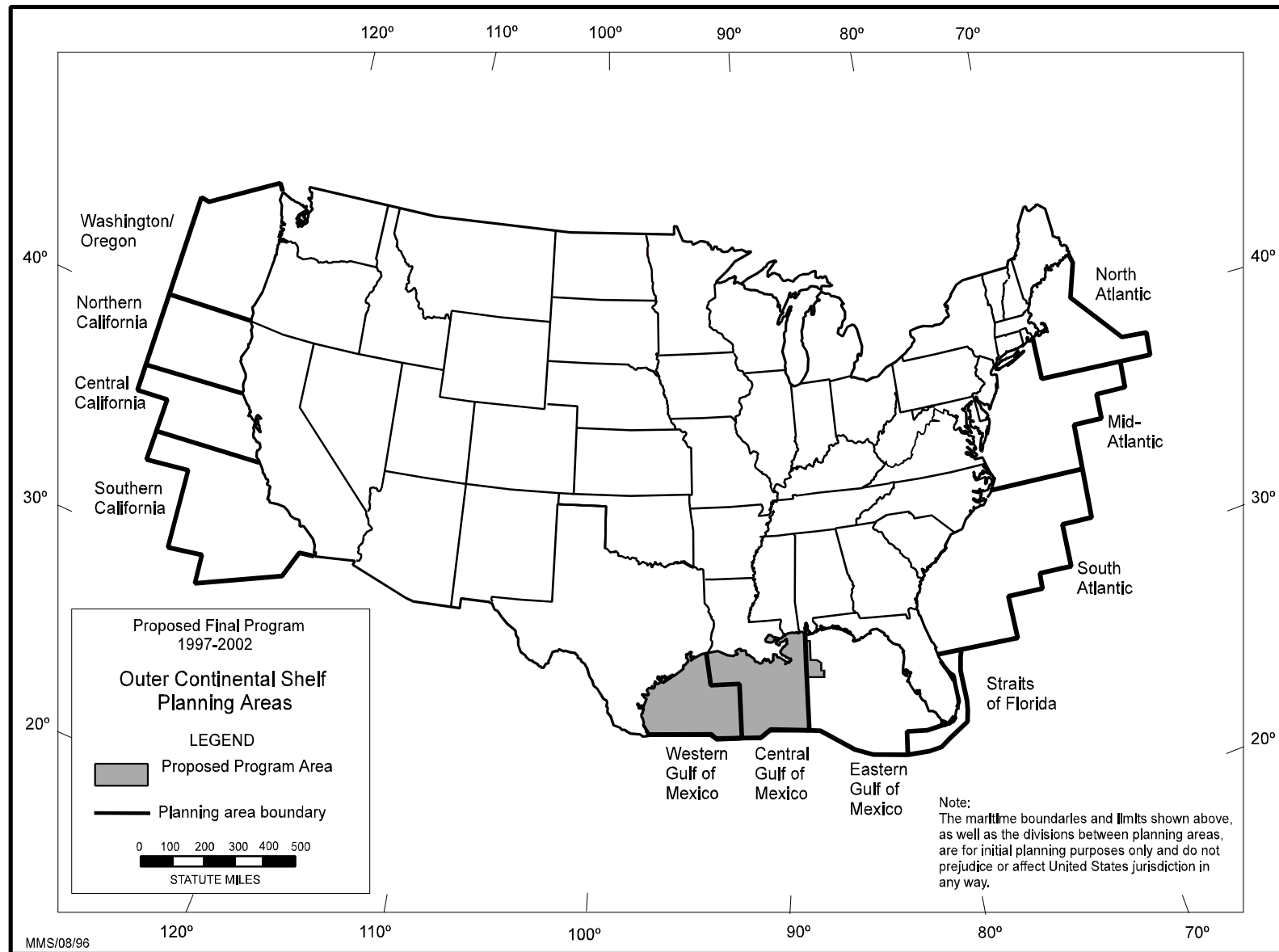
The Central and Western Gulf Planning Areas rank highest in terms of proven hydrocarbon potential, net social value, and the indicated interest of the oil and gas industry. In addition, any environmental risks of OCS production in the Gulf of Mexico are largely offset by resulting decreases in risks from foreign tanker traffic.

The adjacent States, aside from Florida, generally have been supportive of continued OCS leasing. With the exception of production from a limited portion of the Southern California Planning Area, all OCS production comes from the Central and Western Gulf of Mexico.

In response to concerns about possible negative visual impacts of nearshore development off Alabama and industry comments expressing interest in the Eastern Gulf, the Secretary decided to exclude everything within 15 miles of shore and expand the number of deep-water blocks available for leasing. The exclusion of 22 whole and partial nearshore blocks recognizes a request from the Governor of Alabama, made in light of the widespread opposition by local residents, local governments, the local tourism industry, and the State legislature to construction of any additional visible oil and gas structures. The decision to expand the program area by adding 384 deep-water blocks, consideration of which was



Map 1. Alaska



Map 2. Lower 48 States

recommended by the Governor of Alabama, would encompass all nearby existing deep-water leases in the Eastern Gulf and allow development on both sides of the Central Gulf of Mexico and Eastern Gulf of Mexico Planning Areas boundary line.

Pacific Region

There are no Pacific OCS lease sales on the proposed schedule. Production from the Federal OCS off Southern California began in 1968. While the most recent OCS lease sale in that area took place over a decade ago, production actually has increased in the last few years as permitting difficulties related to transportation and processing of oil produced from existing leases have been resolved through the cooperative efforts of the operators, State and local interests, and the MMS. Many coastal residents remain strongly opposed to any increase in oil and gas activities. The State has commented favorably on the exclusion of planning areas off California from the proposed schedule. Local government policies have reflected this sentiment as well. Recent cooperation between the MMS Pacific Office and officials from some local counties in California has helped to identify key concerns and to pave the way for a doubling of production from existing leases. Despite the fact that the proposed schedule would extend into the year 2002, thus exceeding the current moratorium, the Secretary did not want a proposed lease sale in the Pacific to jeopardize the long-term cooperative efforts that have developed with local communities in California.

Atlantic Region

The analysis for the Proposed Final Program included an option to hold an Atlantic OCS lease sale in 2000. The option was not selected. Despite several previous lease sales in the Atlantic Region, there have been no commercial discoveries. While some of the legal claims regarding leases in the vicinity of the Manteo Prospect off North Carolina have been settled, industry interest in this area is unlikely to increase until the underlying disputes are completely resolved. The MMS has begun to work with State and local governments and with other interested parties to identify and resolve issues of mutual concern. The State of North Carolina opposes any new lease sales prior to completion of additional studies relating to existing leases, while other States, including Virginia, have expressed varying degrees of support for carefully designed sales after resolution of specific concerns. Due to the long-term nature of this process and conflict over existing leases, the Secretary felt it premature to schedule an Atlantic lease sale in the program for 1997-2002.

Further Discussion of Proposed Schedule

Among the specific factors the Secretary has considered in his decision are today's reality of relatively inexpensive imported oil; continuously imposed or threatened congressional restrictions; strategic consensus-building efforts for exploration and development in the places where actual exploration and development are most likely to occur or expand; the Nation's current reliance on OCS resources; and section 18 criteria, such as other uses of the OCS sea and seabed; the laws, goals, and policies of adjacent States (including their policies toward any oil and gas resources in their own waters); economic, social, and environmental values; and industry interest. The 5-year period during which the new program will be in effect is an appropriate time to address the controversies that the program has faced. Focusing on being a good neighbor and going slowly, with every

environmental concern extensively studied and analyzed, could result in a 5-year schedule

under which most lease sales are held on time and future OCS production is maximized. The approach reflected in the Proposed Final Program not only facilitates problem-solving and consensus building but also maintains a viable infrastructure and promotes production in proven areas while encouraging exploration and infrastructure development in other areas—such as the deep-water Gulf of Mexico and selected areas on the Alaska OCS—where there is industry interest and the potential for major discoveries. Such a program best meets national energy needs at this time.

The Proposed Final Program also considers existing information on regional characteristics and the equitable sharing of developmental benefits and environmental risks. It can be seen as equitable because those regions and onshore areas facing the most risk also receive the greatest benefits. The Central and Western Gulf of Mexico would face the greatest risks and reap the most benefit. The California OCS will continue to produce high volumes of OCS oil and gas from previously issued leases even though there are no California OCS sales on the proposed schedule. The Alaska OCS, on the other hand, has not yet experienced any major economically viable discoveries, and information on geological and geophysical characteristics of that region is less developed. It is prudent, therefore, that this program proposes several sales in the Alaska OCS Region, especially given the existing infrastructure and onshore production in Alaska, which is not present in the less promising Atlantic planning areas. Inasmuch as both the principal risk (oil spills) and benefit (employment) of OCS development do not accrue to a region until actual production, those States adjacent to existing production will continue to bear the bulk of both the developmental benefits and environmental risks of this program with or without new leasing in other OCS planning areas. In addition, there are measures independent of the 5-year program decision that can be taken to reduce risk to the areas included in the schedule: many leases now include stipulations to avoid some anticipated environmental risks and Congress can enact legislation to provide for some form of coastal impact assistance if it believes that States and localities need further compensation for risks imposed by nearby OCS activity.

***E. Other
Program
Decisions***

Assurance of Fair Market Value. The Secretary has chosen for the Proposed Final Program the same options for assurance of fair market value that he chose for the Proposed Program. The basic minimum bid level would be set at \$25 per acre, subject to sale-by-sale reconsideration, and the current two-phase bid adequacy process, as modified by an announcement of March 29, 1996, would be retained.

***F. Final Steps
in the
Process***

Sixty days after the Proposed Final Program is submitted to the President and the Congress, the Secretary may approve the new 5-year program. During that 60 days, there may be further internal analysis, discussion with constituents, and a review of the decisions announced in this document.

II. FRAMEWORK FOR FORMULATING THE PROPOSED FINAL PROGRAM

A. Analytic Approach

The Proposed Final Program analysis presented in this decision document succeeds and supplements the analysis conducted as the basis for the July 1995 Draft Proposed Program and the February 1996 Proposed Program. The Draft Proposed Program identified for further leasing consideration seven *program areas* consisting of all or parts of eight of the OCS planning areas (see maps 1 and 2). The analysis for the Proposed Program focused on those seven program areas as well as an additional program area in the Mid-Atlantic Planning Area and a deep-water expansion of the program area in the Eastern Gulf of Mexico Planning Area. The program proposal selected by the Secretary was the same as the Draft Proposed Program. This Proposed Final Program analyzes the areas examined in the Proposed Program. Although the Mid-Atlantic and expanded Eastern Gulf of Mexico program areas were not selected for the Proposed Program, they continue to be included in the analysis to ensure that the Secretary has a range of reasonable alternatives to consider pursuant to the National Environmental Policy Act (NEPA).

The analysis presented in this decision document continues the basic approach taken for previous 5-year programs that has been upheld by the U.S. Court of Appeals for the D.C. Circuit. It considers the most current information pertaining to the principles and factors of section 18 of the OCS Lands Act, as amended, and applies both quantitative and qualitative information to those criteria as appropriate. Part II.C below is a general outline of the Proposed Final Program analysis of section 18 principles and factors that shows where relevant detailed information is presented in this decision document, the programmatic final EIS, and other related documents.

This decision document incorporates by reference the following available materials for the Secretary's consideration in formulating the Proposed Final Program:

- Other documents related to the development of a new 5-year program for 1997-2002: Draft Proposed Program Decision Document (July 1995); Proposed Program Decision Document (February 1996); draft Environmental Impact Statement (EIS); and final EIS;
- Documents related to the 5-year program for 1992-1997: Proposed Final Program Decision Documents and Summary and Decision (April 1992); Program Approval Decision Memorandum (June 1992); and final EIS (April 1992);
- *An Assessment of the Undiscovered Hydrocarbon Potential of the Nation's Outer Continental Shelf* (OCS Report MMS 96-0034—available on the MMS home page at <http://www.mms.gov>);
- Other MMS Reports:
 - Federal Offshore Statistics: 1994 (in press)
 - OCS National Compendium (MMS 91-0032)
 - Atlantic Update (MMS 90-0060)
 - Gulf of Mexico Update (MMS 92-0049)

- Alaska Update (MMS 92-0053)
 - The Offshore Environmental Studies Program (1973-1989) (MMS 91-0028) and supplementary reports available through the Environmental Studies Program Information System (ESPIS)
 - OCS Program Cumulative Effects 1987-1991 (MMS 95-0007)
 - OCS Oil Spill Facts (March 1995);
- National Research Council (NRC) Reports:
 - Environmental Information for Outer Continental Shelf Oil and Gas Decisions in Alaska
 - Assessment of the U.S. Outer Continental Shelf Environmental Studies Program (Volumes 1-IV);
- Report of the OCS Policy Committee's Subcommittee on OCS Legislation (October 1993);
 - The Alaska Regional Stakeholders Task Force Report to the OCS Policy Committee (March 1995) and subsequent recommendations dated May 6, 1996;
 - Notice of Call for Public Comment on General Leasing Policies in the Central and Western Gulf of Mexico Planning Areas under the Comprehensive Outer Continental Shelf Natural Gas and Oil Resource Management Program for 1992-1997 (58 *FR* 64409, December 7, 1993) and resulting comment summaries;
 - Notice of Call for Comment on Policy Options and Announcement of Related Workshop for OCS Natural Gas and Oil Resource Management (60 *FR* 76, April 20, 1995) and resulting comment summaries;
 - Notice of Deepwater Royalty Relief for New Leases (61 *FR* 12022, March 25, 1996);
 - Notification of Procedural Changes [relating to bid adequacy evaluation] (61 *FR* 14162, March 29, 1996);
 - U.S. Department of Energy (DOE) Domestic Natural Gas and Oil Initiative (December 1993) and subsequent annual progress report (February 1995);
 - DOE *Annual Energy Outlook* (1992, 1994, 1995, and 1996);
 - *Sustainable Energy Strategy*, DOE National Energy Policy Plan (July 1995); and
 - U.S. Department of Commerce, The Effect of Imports of Crude Oil and Refined Petroleum Products on the National Security (December 1994).

B. Procedural Requirements

The key steps in the program preparation process complying with the requirements of section 18 of the OCS Lands Act and section 102(2)(C) of NEPA are described below.

Request for Comments and Suggestions

On November 16, 1994, the MMS published in the *Federal Register (FR)* (59 FR 59328) a Notice to request comments and suggestions on the preparation of a new 5-year program for 1997-2002 and to begin scoping for the programmatic EIS. At the same time, letters were sent to the Governors of affected States and the heads of interested Federal agencies to announce the start of the program preparation process and request their input.

Draft Proposed Program

On August 9, 1995, the MMS issued for comment the Secretary's initial proposal for the new 5-year program—The Draft Proposed OCS Oil and Gas Leasing Program for 1997-2002—which was formulated based on an updating analysis of information relating to the section 18 criteria and a consideration of the material that had been submitted to the MMS by interested and affected parties in response to the initial request for comments and suggestions. A notice requesting comments on the draft program was published in the *Federal Register* (60 FR 41100) on August 11, 1995. The 60-day comment period for the draft program closed on October 10, 1995.

Proposed Program

On February 7, 1996, the MMS issued the Proposed Program—which affirmed the Secretary's decision for the previous draft proposal—along with a draft EIS. The Proposed Program was submitted to the Congress, the Attorney General, the Governors of affected States, and other interested and affected parties. The Governors received a written explanation of the Secretary's decisions in formulating the Proposed Program, including a description of the disposition of their comments on the Draft Proposed Program. The Proposed Program lease sale schedule was published in the *Federal Register* (61 FR 5256) on February 9, 1996. Issuance of the Proposed Program and draft EIS was followed by a 90-day comment period, during which public meetings to discuss the proposal were held in Alaska, Texas, Louisiana, and Alabama. The comment period closed on May 9, 1996. A summary of comments on the proposal is included as appendix 1 of this document, and comments and information that were offered relating to the NEPA analysis are presented in chapter V of the final EIS.

Proposed Final Program

After comments on the Proposed Program and draft EIS are considered and further analysis is conducted, the Proposed Final Program is issued along with the final EIS. The Proposed Final Program is submitted to the President and the Congress along with copies of comments received and an explanation of the disposition of any recommendations received from affected States and the Attorney General.

Program Approval

Sixty days after the Proposed Final Program is submitted to the President and the Congress, the Secretary may approve the new 5-year program.

C. Substantive Requirements

Section 18 sets forth specific principles and factors to guide 5-year program formulation. Analysis of those principles and factors produces results that are used to develop reasonable options from which the Secretary may, pursuant to section 18(a), select a schedule of proposed lease sales indicating, as precisely as possible, the size, timing, and location of leasing activity which he determines will best meet national energy needs. A brief overview of the section 18 substantive requirements follows.

Energy Needs

Section 18(a) states that the purpose of the 5-year OCS oil and gas leasing program is to help meet the Nation's future energy needs. An analysis of anticipated energy needs is presented in part IV.A of this document. It summarizes the previous analyses of energy needs in the Draft Proposed Program and Proposed Program, which included a discussion of the goals and recommendations of the July 1995 National Energy Policy Plan. The discussion in this decision document also includes a new reference to the most recent *Annual Energy Outlook* published by the Department of Energy (January 1996).

Environmental Considerations

Section 18(a)(1) provides that, in addition to examining oil and gas resources in preparing the 5-year program, the MMS is required to consider the values of other OCS resources and the potential impacts that OCS oil and gas activities could have on those resources including the marine, coastal, and human environments. The principal analysis of issues related to such environmental considerations and concerns is presented in the programmatic final EIS. Part III of this decision document summarizes the findings of the EIS with respect to the size, timing, and location options considered, and part IV.B summarizes the environmental issues raised by commenters and presents pertinent analytic information and references to the EIS.

Factors for Determining Timing and Location of Leasing

Section 18(a)(2) lists eight factors that are to be considered in deciding the timing and location of oil and gas activities among the different areas of the OCS. While some of these factors lend themselves to quantification to facilitate comparison among planning areas, others do not and need to be considered qualitatively. Each of the eight factors [§18(a)(2)(A-H)] is listed below along with references to the parts of the Proposed Final Program analysis that address them.

(A) Geographic, Geological, and Ecological Characteristics

The primary source of information on geographic, geological, and ecological characteristics for consideration in preparing the Proposed Final Program is the programmatic final EIS. Chapter III of the EIS describes the physical, biological, and socioeconomic environments of each OCS region. Chapter IV describes the effects that the size, timing, and location decisions of the Proposed Program (Alternative 1) and the other alternatives considered (Alternatives 2-5) would be expected to have on those resources based on hypothetical scenarios. Summaries of the EIS findings also are provided in part III of this decision document. Additional relevant information in EIS's that have been prepared for lease sales in the current program also has been considered in developing this Proposed Final Program.

In addition to the EIS information, this analysis has the benefit of the following relevant reports and documents incorporated by reference: results of the most recent national resource assessment for the OCS (MMS 96-0034); regional update reports—Alaska (MMS 92-0053), Atlantic (MMS 90-0060), and Gulf of Mexico (MMS 92-0049); cumulative effects reports prepared pursuant to section 20(e) of the OCS Lands Act (MMS 88-0005 and MMS 95-0007); and the results of recent environmental studies as summarized in regional status reports. All this information is used in the ongoing examination and refinement of the program areas that originally were delineated in the Draft Proposed Program.

(B) Equitable Sharing of Developmental Benefits and Environmental Risks

An analysis of the equitable sharing factor is presented in part IV.C of this document. It cites findings of previous 5-year program analyses and presents new information concerning the nature and distribution of benefits and risks associated with the size, timing, and location options under consideration. This analysis also includes references to the portions of the programmatic final EIS that address risks and benefits associated with the analyzed program alternatives.

(C) Location with Respect to Regional and National Energy Markets and Needs

Part IV.A of this decision document presents an analysis of regional and national energy needs. Chapter III of the programmatic final EIS describes the socioeconomic environment for each OCS region, including the existing oil and gas infrastructure and its relationship to new leasing. Additional sources of information relating to regional distribution and processing of OCS oil and gas include the regional update reports cited above and recent lease sale EIS's.

(D) Location with Respect to Other Uses of the Sea and Seabed

Information on competing uses of the OCS is included in the programmatic final EIS descriptions of the physical, biological, and socioeconomic environments for each OCS region in chapter III as well as in the discussion of environmental consequences in chapter IV. Relevant information from the EIS is summarized in part IV.C of this document. Additional sources of information relating to this factor include recent lease sale EIS's, the cumulative effects reports, and various OCS environmental studies program reports.

(E) Interest of Potential Oil and Gas Producers

Part IV.C includes a description of the oil and gas industry's comments as they relate to interest in the leasing proposals under consideration. Relevant industry comments are summarized in the discussions of leasing options presented in part III, and all comments received are summarized in appendix 1.

(F) Laws, Goals, and Policies of Affected States

Information on relevant laws, goals, and policies and Federally approved coastal zone management programs of affected coastal States is included in the summaries of selected comments that are presented in the discussions preceding leasing options in part III. In addition all comments received are summarized in appendix 1.

(G) Relative Environmental Sensitivity and Marine Productivity

An analysis of the environmental sensitivity/marine productivity factor is presented in part IV.C of this document. It is based on the information and approach of the analysis done for the 5-year program for 1992-1997. The analysis cites appendix 11 of the April 1992 Secretarial Issue Document (SID) and discusses relevant information that has become available since 1990.

(H) Environmental and Predictive Information

The principal source of environmental and predictive information is the programmatic final EIS, primarily chapters III and IV. Chapter III of the EIS describes in detail the physical, biological, and socioeconomic environments of each OCS region, and chapter IV of the EIS discusses expected environmental effects based on hypothetical scenarios. Pertinent findings of the EIS are summarized in part III of this decision document. Additional sources of information relating to this factor include recent lease sale EIS's, regional update reports, cumulative effects reports, and various environmental studies program reports.

Balancing Potential Environmental Damage, Discovery of Oil and Gas, and Adverse Impact on the Coastal Zone

Section 18(a)(3) requires the Secretary to render decisions on the timing and location of OCS leasing that balance environmental and developmental principles based on consideration of the factors described above. The statute does not specify what kind of balance or how to weigh each of the specified factors and considerations. Each Secretary has discretion to weigh and choose a reasonable balance.

This balancing requirement is addressed in part IV.C of this decision document, which presents a comparative analysis of planning areas. As in previous 5-year program decision documents, the comparative analysis includes an estimation of net social value for each OCS area under consideration that is derived by calculating the value of oil and gas resources minus the costs to industry and the environmental and social costs of developing those resources (additional microeconomic benefits also are estimated in the current analysis). See table 6 for results of the social value analysis.

Information also has been quantified to facilitate comparison of the environmental sensitivity/marine productivity factor (see tables 7-9). Analysis of the equitable sharing factor includes a consideration of quantified regional costs and benefits (see table 10) and a discussion of the nature and distribution of developmental benefits and environmental risks. The comparative analysis also includes an examination of industry interest and other balancing considerations based on information pertaining to the nonquantifiable factors set forth in section 18(a)(2), the findings and purposes of the OCS Lands Act Amendments of 1978 (Title II), the comments and recommendations of interested and affected parties, and other relevant information.

Assurance of Fair Market Value

Section 18(a)(4) requires that leases sold under the 5-year OCS oil and gas leasing program receive fair market value. An analysis pertaining to the assurance of fair market value, which addresses the establishment of a minimum bid level and procedures for reviewing the adequacy of bids received, is presented in part IV.D.

D. Judicial Guidance

The new 5-year program will be the fifth prepared by the Department of the Interior (DOI). The first three programs prepared and approved under section 18 were challenged in court—in 1980, 1982, and 1987. The U.S. Court of Appeals for the District of Columbia Circuit decided all of those lawsuits. The new 5-year program is being prepared in accordance with guidance provided in those decisions, which are cited as follows:

California I [California v. Watt, 688 F2d 1290 (D.C. Cir. 1981)];

California II [California v. Watt, 712 F2d 584 (D.C. Cir. 1983)]; and

NRDC [Natural Resources Defense Council, et al. v. Hodel, 865 F2d 288 (D.C. Cir. 1988)].

No lawsuit was filed against the 5-year program approved for 1992-1997.

III. PROPOSED FINAL PROGRAM OPTIONS

A. Size, Timing, and Location

Relevant considerations for formulating and selecting options to determine the size, timing, and location of OCS leasing as required by section 18 are discussed below. Options pertaining to size, timing, and location are also discussed. The full range of options available for the Secretary's consideration in deciding on a Proposed Final Program for 1997-2002 is presented. **The options chosen by the Secretary are discussed in part I, Summary of Decision.**

Consideration of the comments of interested and affected parties plays an important part of the section 18 process, and responsiveness to those comments is a key element of MMS policy in framing options and working toward consensus decisions on the OCS program. The Proposed Final Program options presented in this document reflect careful consideration of the section 18 analysis and consultation with interested and affected parties.

Considerations

Continuing the approach taken with previous drafts of this program, the Proposed Final Program provides options for scheduling lease sales in the Central and Western Gulf of Mexico Planning Areas and in defined program areas within certain other OCS planning areas. Each lease sale that is scheduled in the approved 5-year program for 1997-2002 will undergo a prelease evaluation and decision process in which interested and affected parties may participate. The prelease process evaluates the proposed lease sale and alternatives (limited to the area identified as available for leasing in the approved 5-year program) and leads to a final decision on the size, timing, and location of each OCS lease sale.

Various considerations are used to determine the timing of OCS lease sales. Section 18 requires the 5-year program to best meet national energy needs and to ensure the receipt of fair market value for lands leased and rights conveyed. The results of analyses and consultation conducted according to section 18 are weighed carefully in formulating a program to accomplish those goals. Other relevant considerations include the possibility of drainage of unleased OCS lands by adjacent production and the effect that scheduling a lease sale in a certain area might have on geological and geophysical data acquisition. In addition the scheduling of lease sales must allow time for orderly and deliberate preparation for each sale, including the acquisition and analysis of relevant scientific information and the completion of the prelease evaluation and decision process.

Principles that were developed for consideration in the formulation and selection of leasing options for the new 5-year program for 1997-2002 are:

- **Best Meeting National Energy Needs Considering the Purposes, Findings, and National Policy of the OCS Lands Act Amendments**

The referenced purposes, findings, and policies provide for expedited and orderly exploration and development of oil and gas resources in a manner that safeguards the environment, minimizes or reduces conflicts with other resources, and assures that affected State and local governments are informed and consulted in OCS planning and decisionmaking and that their concerns for preserving and protecting their environments are recognized and considered. Consideration of options for the size, timing, and location of OCS leasing in light of these principles should recognize that in some OCS

areas the goal of expedited exploration and development is more compatible with affected State and local interests than in others. Earlier, more frequent, and larger lease sale proposals might be more appropriate to consider in areas where the neighboring governments are amenable. In areas where the OCS program has not been received as compatible with State and local interests, it might be more appropriate to consider later and smaller lease sales. In those areas where there has been longstanding and intense opposition and resulting controversy with respect to the orderly development of the OCS program, it might be most appropriate to consider an even slower and more deliberate approach focusing on the resolution of existing conflicts related to the program before scheduling new leasing. Leasing proposals that are perceived locally as too ambitious for historically controversial areas actually could undermine the goal of expedited and orderly exploration and development by engendering more intense controversy and bringing about prohibitions that could be effected over a longer term than the 5-year program for 1997-2002.

In developing a 5-year program to best meet the Nation's energy needs the Secretary should consider today's reality of relatively inexpensive imported oil, continuously imposed or threatened congressional restrictions, strategic consensus-building efforts for exploration and development in the most likely places where actual exploration and development can occur or expand, and the Nation's current reliance on OCS resources.

- **Economic, Social, and Environmental Values**

These values and the potential impacts that OCS oil and gas activities could have on them are considered. The economic, social, and environmental values placed on OCS oil and gas and on other resources in marine and coastal areas are reflected in the comments submitted by interested and affected parties. For areas in which resources other than OCS oil and gas currently have higher economic, social, and environmental values it might be appropriate to consider excluding them from this 5-year program or proposing a small sale late in the program in those cases where it appears the values placed on different resources might adapt to such a proposal. For areas in which development of OCS oil and gas is deemed compatible with the values placed on other resources it might be appropriate to consider larger and more frequent lease sales.

- **Resource Potential and the Interest of Potential Oil and Gas Producers**

The leasing options for each OCS area reflect a consideration of the potential for the discovery and development of hydrocarbons in conjunction with the apparent willingness of firms to pay fair market value to acquire the lease rights for those anticipated resources. In considering this principle it is relatively straightforward to conclude that areas of greater estimated resource potential and economic value along with higher industry interest would be better candidates for earlier, more frequent, and larger lease sales and that areas of little or no estimated value or interest would be better candidates for exclusion from the leasing program or for later or less frequent sales. It is more problematic to consider an area with little estimated hydrocarbon potential and definite industry interest or an area with higher potential but lower or diminishing interest. If the potential environmental risk is determined to be acceptable, it might be reasonable to propose leasing in an area such as the former because the interested firm(s)—regardless of the assumptions of the government and other companies concerning the area—are likely to offer fair market value to acquire leases. There are a number of areas of greater estimated resource potential but little or no interest, a state of

affairs that has come about due to long-term controversy and resulting restrictions. It might be appropriate to exclude or defer such an area from leasing until underlying conflicts can be addressed and resolved, because firms have expressed reservations about attempting to lease, explore, and develop in a prevailing atmosphere that they perceive as hostile to such actions.

- **Developmental Benefits and Environmental Risks**

The different areas of the OCS are considered in terms of the developmental benefits and environmental risks that are anticipated to accrue to each area and to be distributed among all of the areas. A proposal to lease an area should examine the overall equitable sharing of benefits and risks among OCS areas. A consideration of available information should indicate that proposed leasing will not cause unacceptable environmental risk or pose an unacceptable level of conflict with other uses of the sea and seabed or the recovery of other resources such as fish and shellfish. Size, timing, and location options and decisions should be considered in light of their potential environmental impacts on the planning area as well as their overall effect on the expeditious and orderly development of the potential hydrocarbon resources estimated to be in the proposed leasing program. Also, for some areas it might be determined that additional research relating to benefits and risks would significantly improve the information available for decisionmaking. For such areas it might be appropriate to consider deferring leasing proposals until additional studies are completed.

- **Competing Uses of the OCS**

The other uses of the resources and space within the areas analyzed for possible leasing are considered. Significant competing uses include subsistence (traditional hunting and fishing activities by Alaska Natives), commercial fishing, tourism and recreation, vessel traffic, protection and preservation of marine and coastal resources in areas such as parks and sanctuaries, military and space program operations, and nonenergy marine mineral development. It might be appropriate to consider larger and more frequent lease sales in areas where such competing uses are nonexistent, minimal, or demonstrated to be generally compatible with OCS oil and gas activities. In other areas where significant established competing uses do not appear to be compatible with new OCS leasing and related activities, it might be appropriate to consider exclusion of all or parts of such areas and a slower pace of leasing to accommodate those other uses.

- **Laws, Goals, and Policies of Affected States**

The compatibility of OCS program options with the relevant State laws, goals, and policies identified by the Governors of affected States has been fully considered in formulating this Proposed Final Program. It is reasonable to conclude that proposed OCS leasing might be more appropriate in areas where the affected State(s) have measures that the Governors and State agencies cite explicitly supporting the OCS program, indicate that OCS activities generally are consistent with Federally approved State coastal zone management (CZM) programs, or refer to provisions for administering oil and gas programs in State waters. In many cases the existence of common hydrocarbon plays and related infrastructure in State and Federal waters promotes offshore development activity in both realms if the State policies are supportive. Conversely, in areas where the affected State(s) have policies preferring alternative energy sources to offshore oil and gas, indicate that OCS activities have not been found

to be consistent with CZM programs, or identify measures that have been established to prohibit offshore oil and gas activity in State waters, such policies have the effect of discouraging or impeding expeditious and orderly OCS activities, and therefore, it might not be appropriate or wise in the long run to propose OCS leasing in this 5-year program.

- **Regional Energy Needs**

The energy needs of the onshore region in which anticipated OCS hydrocarbon resources would be processed and used are considered. In those cases where a particular region has demonstrated a need and economic and environmental preferences for using OCS oil and gas it would be reasonable to consider earlier, more frequent, and larger lease sales. However, another region might have a large potential demand for oil or gas that could be produced from the nearby OCS, but State and local policies favor using alternative forms of energy or receiving oil and gas from other geographic sources. In developing and considering size, timing, and location options in such a case, the environmental benefits and risks associated with using other fuels or importing oil or gas over great distances should be considered and compared with the risks and benefits of developing and using oil and gas from the OCS.

Additional background information on size, timing, and location considerations is contained in the April 1992 SID on pages 123-143.

Options for Scheduling Lease Sales

Options for scheduling lease sales in the Proposed Final Program are presented by OCS region and planning area. For each region a review of the Proposed Program decision precedes the presentation of options. The discussion of Proposed Final Program options for each planning area includes a summary of key comments received by the MMS in response to the Proposed Program. These comment summaries are adapted from appendix 1, which provides information on all comments received by the MMS and relevant statements offered at public meetings held during the comment period following issuance of the Proposed Program. Additional information that is relevant to the consideration of each planning area for leasing is presented in part IV.C of this document and in chapters III and IV of the programmatic final EIS. The overview of section 18 requirements in part II.C above describes the principles and factors that have been analyzed and provides specific references to the places in this document and in the EIS where corresponding information is presented.

Following the presentation of the set of leasing options for each planning area, each option is discussed individually in terms of the value of the benefits that would be anticipated as a result of the proposed leasing and ensuing production, as well as in terms of the potential environmental impacts that could be expected. The analysis underlying the valuation of leasing options—and definitions of associated terms—is provided in appendix 2. The detailed information on which the summaries of environmental impacts are based is provided in the final EIS.

Relationship of Program Options to EIS Alternatives

The draft EIS prepared for the Proposed Program analyzed five separate alternatives including the proposed action. The final EIS accompanying this Proposed Final Program analyzes the five alternatives with additional elements examined under Alternative 4 as indicated in italics below.

- Alternative 1—The Proposed Action—corresponds to Option 1 in this decision document for the Alaska and Gulf of Mexico areas. The term "program proposal" used in this document is synonymous with this alternative.
- Alternative 2—No Action—would schedule no sales (Option 2 in this decision document).
- Alternative 3—Slow the Pace of Leasing—would modify the proposed action by reducing the number of sales scheduled in the Beaufort Sea and the Central and Western Gulf of Mexico areas (Option 3 in this decision document).
- Alternative 4—Exclude Some Areas—would modify the proposed action by excluding the Hope Basin and Gulf of Alaska program areas, the Eastern Gulf of Mexico program area *or a portion of that area, and a portion of the Beaufort Sea program area* from leasing consideration (Option 3 for Chukchi Sea/Hope Basin, Option 2 for Gulf of Alaska, Options 2 *and* 4 for Eastern Gulf of Mexico, *and Option 4 for Beaufort Sea* in this decision document).
- Alternative 5—Lease Additional Areas—would modify the proposed action by expanding the Eastern Gulf of Mexico program area with the addition of 384 deep-water blocks and considering two sales in the revised area and by considering scheduling a sale in the Mid-Atlantic (Option 3 for the Eastern Gulf and Option 1 for the Mid-Atlantic in this decision document).

ALASKA REGION

Proposed Program Decision

The Proposed Program scheduled for further consideration the following lease sales in the Alaska OCS Region:

- Beaufort Sea—sale in 1998 in the program area depicted on map 3 and sale in 2000 in the program area depicted on map 4;
- Chukchi Sea/Hope Basin—one sale in 2002 in the program area depicted on map 7;
- Cook Inlet/Shelikof Strait—one sale in 1999 in the program area depicted on map 8; and
- Gulf of Alaska—one sale in 2001 in the program area depicted on map 9.

The proposed timing and location of these lease sales are based in large part on the recommendations of the Alaska Regional Stakeholders Task Force, which identified these planning areas for further analysis in developing the new 5-year program and requested that no more than one Alaska OCS lease sale be scheduled for each area per year.

The Alaska Regional Stakeholders Task Force was established by the OCS Policy Committee of the Minerals Management Advisory Board in November 1994 and charged to assist the MMS in developing the Alaska Region element of the new 5-year program for 1997-2002. The Task Force includes members representing: Alaska Native subsistence, and environmental organizations and communities; commercial fishing and oil and gas industries; and local, State, and Federal Government and Coastal Districts and Coastal Resource Service Areas. The Task Force prepared and submitted to the OCS Policy Committee a report and resolution presenting its findings and recommendations. On May 3, 1995, the OCS Policy Committee voted unanimously to accept the Alaska Regional Stakeholders Task Force report and forward it to the Secretary of the Interior. The Secretary responded to the Chairman of the Policy Committee in a letter dated August 24, 1995, stating, "The specific recommendations of the Task Force report will guide us in developing the 1997-2002 5-year program in Alaska, especially since stakeholders were involved in developing these recommendations."

The Task Force developed a list of evaluation criteria that were used to select the Alaska OCS planning areas recommended to be further evaluated by the MMS. Those criteria and their consistency with the requirements of section 18 are:

- Prospectivity (industry interest/hydrocarbon resource potential), which corresponds to sections 18(a)(2)(A) and (E);
- Infrastructure, which corresponds to sections 18(a)(2)(A)-(F);
- Technology, which corresponds to sections 18(a)(2)(A)-(H);

- Local/Tribal Government and Community Interests, which correspond to sections 18(a)(2)(C), (D), (H) and to the consultation provisions of section 18(c)(1);
- Subsistence/Socioeconomic/Cultural Interests, which correspond to sections 18(a)(2)(A)-(D), and (H);
- Environmental Concerns/Values, which correspond to sections 18(a)(2)(A)-(H).

A member of Greenpeace, representing the Alaska Lands Act Coordinating Committee, submitted as a supplement to the Task Force report a minority report stating that the majority report does not accurately reflect the high level of concern and strong opposition to OCS activity expressed by coastal residents throughout Alaska.

After the Draft Proposed Program was issued, Task Force members were polled to confirm whether they viewed that proposal as being consistent with the original recommendations of the Task Force. Those who responded—with the exception of the member of Greenpeace who submitted the minority report cited above—agreed that the draft program was consistent with those recommendations. The dissenting member reiterated the concerns mentioned in that minority report, stating that neither the original Task Force report nor the draft program reflected the level and nature of concerns expressed by Alaska coastal communities. The co-chair of the Task Force who conducted the poll reported the results in a letter to the Chairman of the OCS Policy Committee dated October 13, 1995. While that letter described the one dissenting opinion and noted that not all members responded, it went on to state that it would be appropriate to conclude that the Draft Proposed Program was consistent with the recommendations of the Alaska Regional Stakeholders Task Force.

The Draft Proposed Program decision was carried forward in the Proposed Program, and the Task Force met again on May 6, 1996—during the 90-day comment period—to discuss issues and concerns and develop additional recommendations. The Task Force endorsed its original recommendations and made the following additional recommendations:

- Endorse MMS efforts to incorporate traditional knowledge and expand analyses of effects to marine mammals, as recommended by the North Slope Borough, Alaska Eskimo Whaling Commission, and others;
- The MMS should continue to review existing prevention and response technology for oil spills and discharges and to develop incentives to encourage improvements where necessary; and
- Review existing mechanisms to compensate communities (subsistence and other resource users) in the event of an oil spill and make recommendations for changes in law (i.e., the Oil Pollution Act of 1990) or regulations as necessary to expedite compensation.

A presentation that included these recommendations and a summary of the minutes of the meeting was given to the OCS Policy Committee at its session on May 22, 1996.

Key comments received by the MMS since starting the 5-year program preparation process—which have included statements and resolutions for and against future leasing—have been summarized in the decision documents for the Draft Proposed Program, the Proposed Program, and the Proposed Final Program. Appendix 1 of this decision

document summarizes the most recent comments—those received following issuance of the Proposed Program—and includes a summary of the Alaska Stakeholders Task Force Meeting held on May 6, 1996.

The Alaska Regional Stakeholders Task Force report (including the minority report submitted by Greenpeace) and information related to the Policy Committee's actions are incorporated in this decision document by reference and are available from the MMS. Lease sale options for the Proposed Final Program are based mostly on a consideration of the findings and recommendations of the Task Force and are consistent with the requirements of section 18.

The State of Alaska's comments on the Proposed Program expressed continuing support for the MMS 5-year program preparation process—including the concept of the Alaska Regional Stakeholders Task Force—and made some specific suggestions for identifying issues and focusing discussions by the Task Force in the future. The State also expressed support for using a task force approach for future 5-year program planning and indicated it would be pleased to participate in stakeholders task forces for individual lease sales.

Alaska's comments relating specifically to size, timing, and location options are summarized below and in appendix 1, and State laws, goals, and policies that are relevant to program preparation were summarized in the Draft Proposed Program and considered in the development of program options. All leasing options for the Alaska OCS Region in the Proposed Final Program continue to reflect the consideration of relevant State laws, goals, and policies as identified in the Draft Proposed Program.

Proposed Final Program Options

Information and options are presented for the Alaska OCS program areas that were scheduled for lease sales in the Proposed Program—Beaufort Sea, Chukchi Sea/Hope Basin, Cook Inlet/Shelikof Strait, and Gulf of Alaska. Options are not presented for those areas that have been excluded from leasing consideration in previous drafts of the 5-year program for 1997-2002—St. George Basin, Norton Basin, Navarin Basin, St. Matthew-Hall, North Aleutian Basin, Aleutian Basin, Bowers Basin, Aleutian Arc, Shumagin, and Kodiak.

Beaufort Sea

Selected Comments

The Alaska Office of Management and Budget, Division of Governmental Coordination, stated that small sale areas such as the one for proposed Sale 170, target areas of oil and gas interest without unnecessarily raising concerns about other areas that are not likely to receive bids and also mentioned looking forward to working closely with the MMS and other stakeholders during review of individual lease sale proposals. The Mayor of Kaktovik expressed opposition to proposed leasing in the Beaufort Sea, citing concerns about potential negative impacts on the resources, livelihood, and culture of the community. The Mayor of the North Slope Borough reiterated opposition to offshore oil and gas activity and made two recommendations: (1) incorporate in the final EIS for the 5-year program the mitigating measures developed for Beaufort Sea Sale 144; and (2) exclude the bowhead whale feeding area east of Barter Island from future lease sales including proposed Sale 176 in 2000. Concerning the recommendation to exclude the area east of Barter Island, the Mayor stated that fall drilling activities in that area would be inconsistent with provisions of the Borough's Coastal Management Program explicitly prohibiting development that prevents subsistence user access to a subsistence resource.

The Alaska Eskimo Whaling Commission (AEWC) recommended incorporation of the Sale 144 mitigating measures and suggested a number of additional steps designed to protect marine resources and subsistence activities consistent with the Marine Mammal Protection Act and to minimize conflicts with subsistence users. The Alaska Marine Conservation Council (AMCC) reiterated that concerns raised by subsistence hunters in the Beaufort Sea should be fully considered. The Coastal/Oceans Forum of the Sierra Club cited potential offshore and onshore environmental effects and expressed opposition to new leasing in this area.

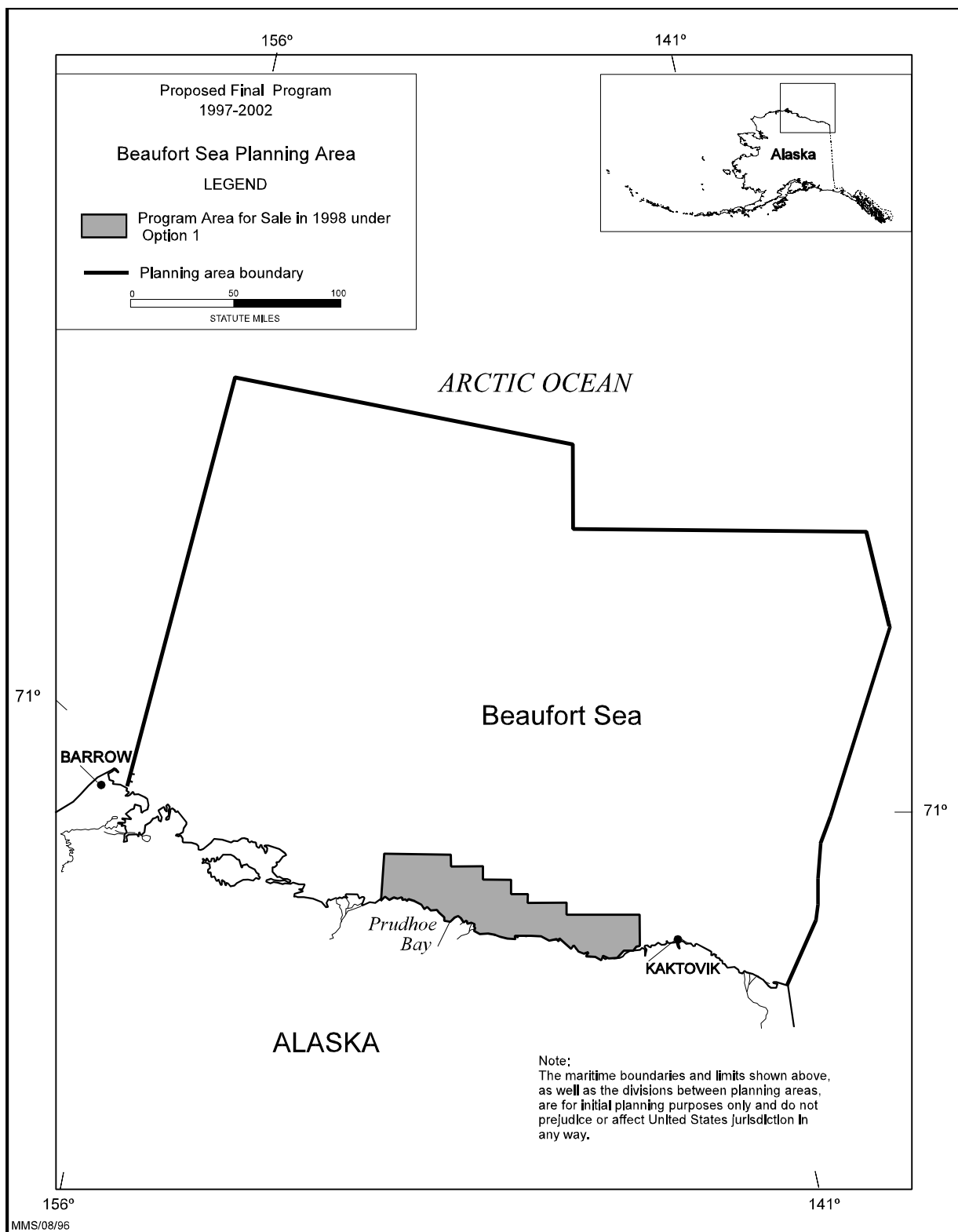
The American Petroleum Institute (API) and the Alaska Oil and Gas Association (AOGA) endorsed the Alaska lease sales scheduled in the Proposed Program. ARCO Alaska endorsed the Alaska sales but recommended rescheduling the proposed Beaufort Sea sales for 1999 and 2001 if Sale 144 (scheduled for September 1996 under the 5-year program for 1992-1997) is not held before the current program ends in July 1997. BP Exploration (Alaska) Inc. expressed support for the Beaufort Sea sales scheduled in the Proposed Program and reiterated a request to consider accelerating the Alaska sale schedule whenever possible. Chevron, Phillips, and Texaco cited previous comments specifically endorsing the proposed Beaufort Sea lease sales, and Marathon cited previous comments expressing general interest in the area. Shell cited previous comments expressing support for scheduling only one small nearshore sale in 2000.

The U.S. Department of Energy (DOE) commented that Alaska OCS resources potentially can make a great contribution to U.S. energy supplies in the long run.

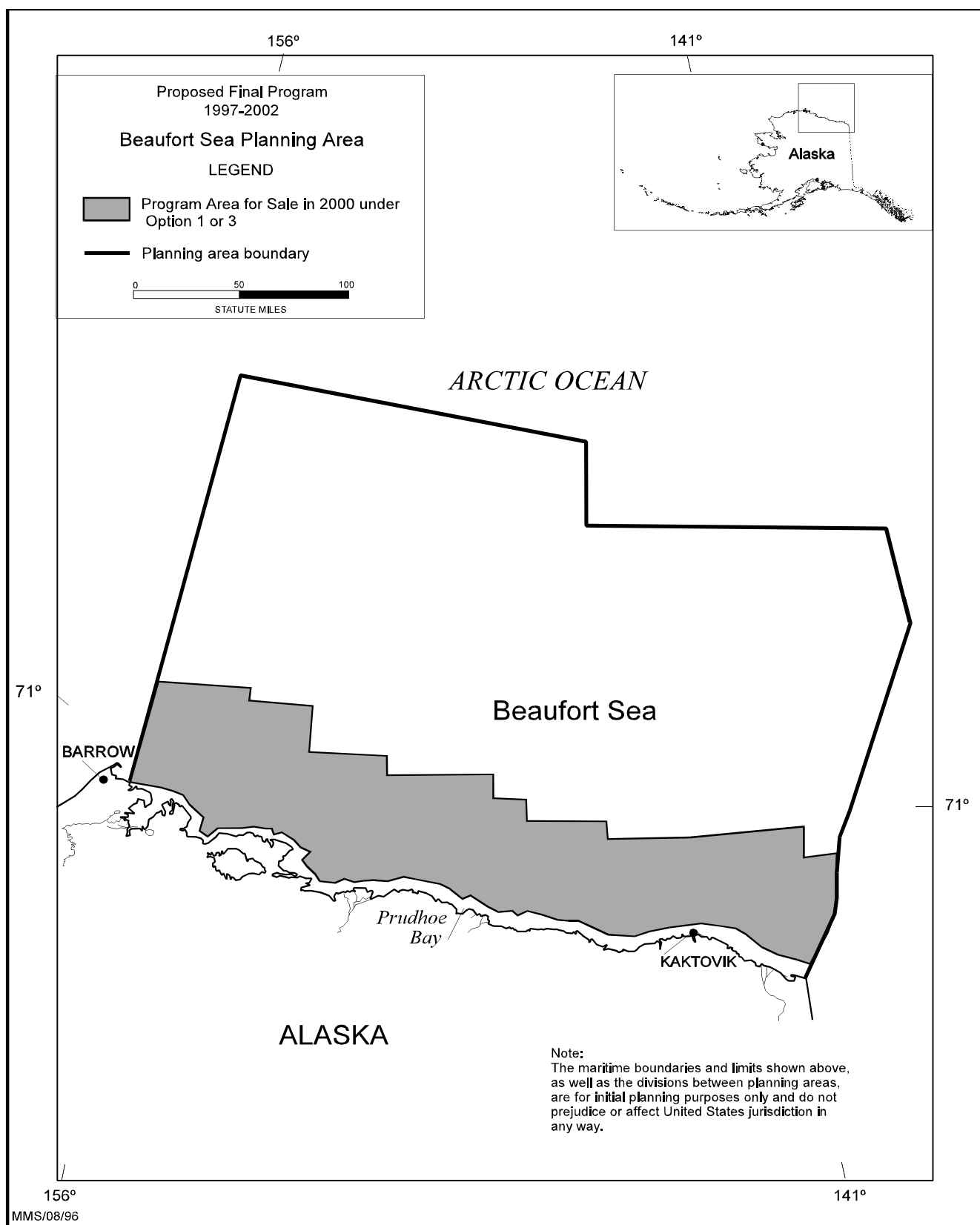
Additional information concerning comments—including statements offered at public meetings held by the MMS during the comment period following issuance of the Proposed Program—is provided in appendix 1.

Options

- (1) Proposal as adopted for Proposed Program—one sale in 1998 focusing on nearshore blocks (map 3) and another sale in 2000 (map 4)
- (2) No sale
- (3) One sale in 2000 in program area (map 4)
- (4) Exclude a portion of the program area to be considered for lease sale in 2000 under Option 1 or Option 3:
 - (a) all 500 blocks east of Barter Island (map 5); or
 - (b) the 416 blocks east of Barter Island that are farther from shore and encompass the central whale migration corridor (map 6)
- (5) Other



Map 3. Beaufort Sea Planning Area - Focused Nearshore Sale for Option1



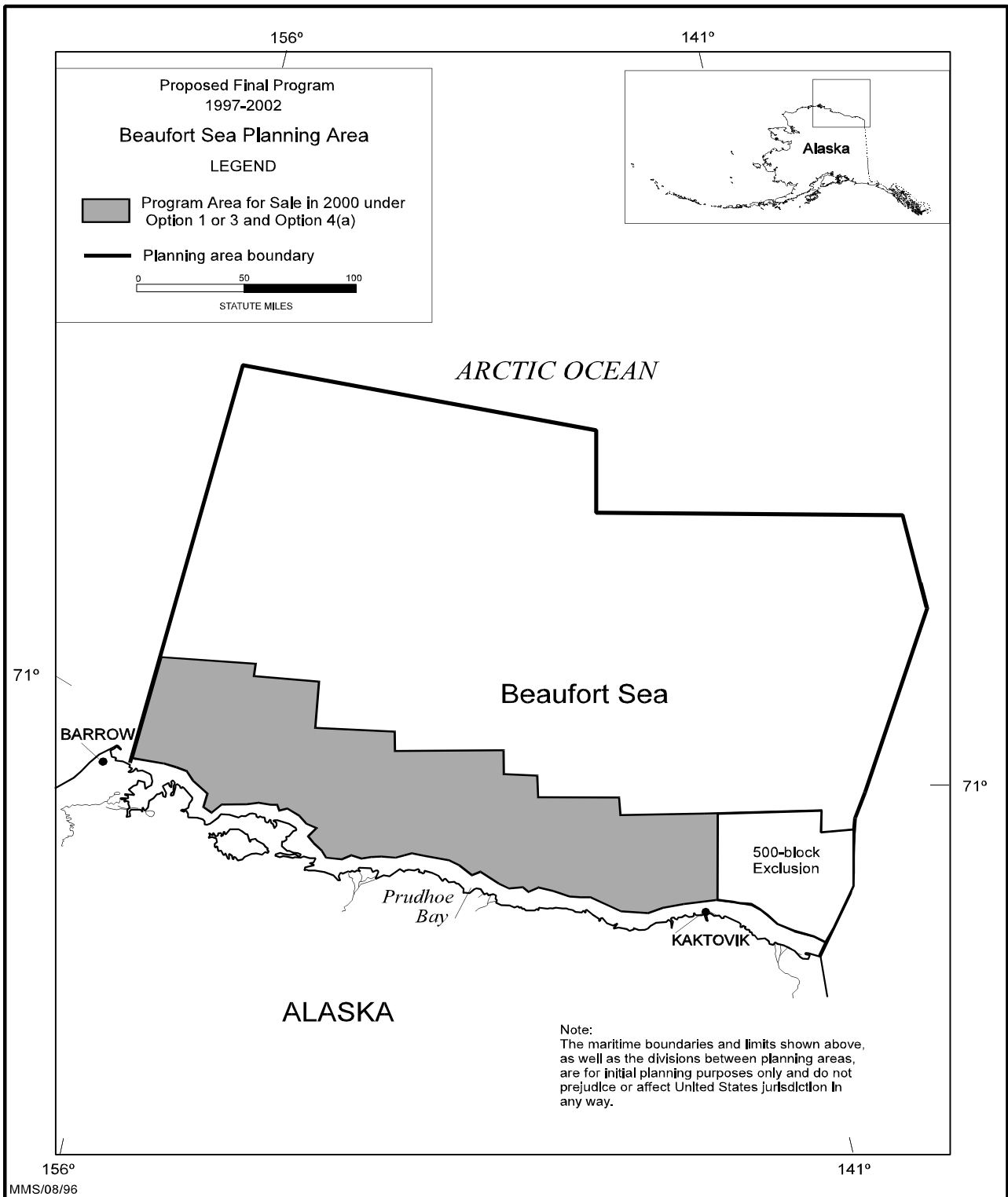
Map 4. Beaufort Sea Planning Area - Full Program Area for Option 1 or 3

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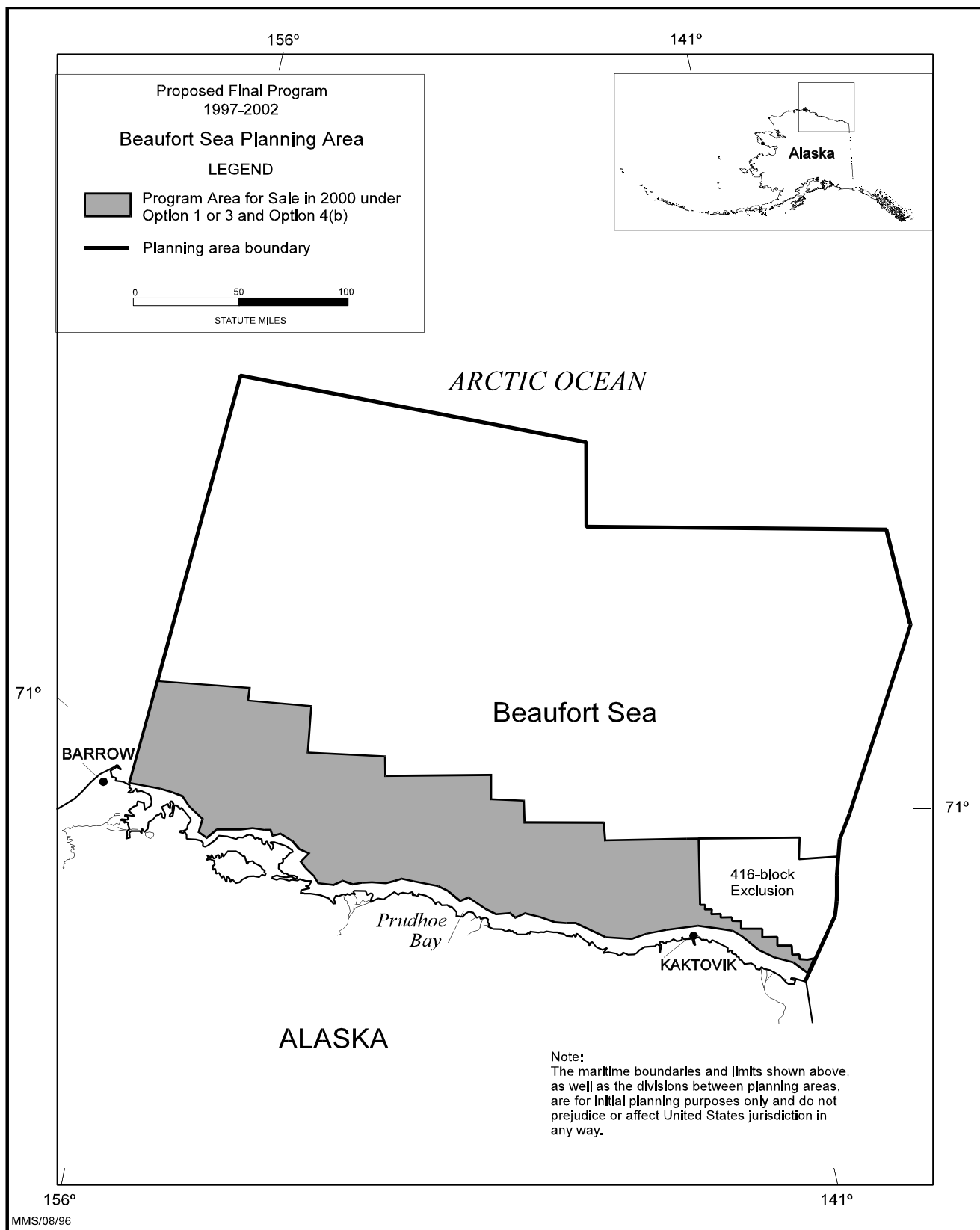
August 27, 1996

Decision Document Proposed Final 5-Year Program for 1997-2002

Replace map 5 on page 29 with the version below, which corrects the area shown for the proposed Beaufort Sea Option 1 or 3 and Option 4(a).



Map 5. Beaufort Sea Planning Area - Combination of Option 1 or 3 and Option 4(a)



Map 6. Beaufort Sea Planning Area - Combination of Option 1 or 3 and Option 4(b)

Valuation of Option 1. The net social value resulting from anticipated hydrocarbon production under this option is estimated to be \$818 million in the Base Case and \$7.6 billion in the High Case. Additional microeconomic benefits are estimated to be \$270 million in the Base Case and \$1.8 billion in the High Case.

Environmental Impacts Associated with Option 1. This option is examined in the programmatic final EIS as part of Alternative 1.

Pollutant concentrations are not likely to exceed water-quality criteria outside a 100-meter radius around each drill site. There could be increases of nitrogen oxide concentration in the ambient air.

Sublethal effects could occur on the bowhead whale population due to noise and oil spills. Noise could affect fin, humpback, right, blue, sei, and sperm whale populations. The primary effects on beluga whales would be from noise from marine-vessel traffic and oil spills. Oil spills could result in some mortality among newborn or severely stressed adult ice seals. Adult walrus should experience few fatalities, but calves could experience fatal effects. The effects on caribou are expected to include local displacement along transportation corridors but should not affect migrations, overall distribution, and abundance.

Abandonment of threatened arctic and endangered American peregrine falcon nests could occur, and activities are expected to disturb few nesting eagles. Mortality from oil spills is expected to be minimal. Stellers, spectacled eider, and short-tailed albatross are expected to experience minimal effects related to entanglement in debris and ingestion of plastics. Mortality of these species due to an oil spill might require two generations or more for population recovery. Oil spills could result in losses to diving duck populations occupying open-water habitats farther offshore in spring. Oil spills contacting most goose species should cause minor losses. The major impact-producing factor on seabirds is expected to be spilled oil.

The level of oil and gas exploration and development is not likely to have an appreciable effect on groundfish or shellfish populations.

Causeway and pipeline landfall construction and oil spills might affect wetland-estuarine habitats. Oil spill contamination of wetland-estuarine habitats would affect the biological diversity or productivity of invertebrate communities.

Impacts on sociocultural systems would be centered predominantly within the arctic communities of the North Slope Borough and Northwest Arctic Borough, primarily because of potential impacts to subsistence harvests from oil spills.

Potential impacts on recreation and tourism in the Beaufort Sea could result from the accidental deposition of trash and debris that could reach the shoreline.

Tanker spills of OCS oil produced off Alaska as a result of leasing under the proposed action could occur in the waters of the Pacific Region, elevating hydrocarbon levels and limiting water use within affected areas over a period of several days to weeks. Such a spill could result in the deaths of a few individuals of Guadalupe fur seals, sea lion pups, or sea otters. Populations of black storm-petrel, Xantus' murrelet, marbled

murrelet, whiskered auklet, and clapper rails could require at least three generations for recovery.

The impacts to Pacific whiting, salmon, and steelhead trout within Washington, Oregon, and California would not be discernible from natural variations both locally and regionally. Recovery of affected local populations should occur within 2 years.

Oil contact with rocky intertidal areas could cause mortality and alteration of ecological relationships within the biotic community. If a spill contacted one or more of the relatively few hard-bottom communities, it could result in mortality of the biota causing alterations of ecological relationships lasting for at least 2 years. Impacts from oil spills entering wetlands and estuaries could involve destruction of a major part of the local biotic community where oil has soaked into the sediments. Recovery could require 5 or more years.

A large oil spill could affect vessel traffic and ports and public services. Some vessel traffic would be rerouted during the spill and cleanup, fishing activity would be curtailed in the spill area, and some ports could experience increased activity while others could be closed. This could result in economic losses for up to two seasons for fixed-gear fishermen and financial losses to businesses in California, Washington, and Oregon. Disturbance to recreational fishing could result in local economic losses of up to 20 percent for approximately a month.

Valuation of Option 2. The total net value of benefits resulting from anticipated hydrocarbon production under this option would be zero since no activity would take place.

Environmental Impacts Associated with Option 2. This option is examined in the programmatic final EIS as part of Alternative 2.

The choice of this option would result in a lack of activities associated with other options proposing sale(s) in the planning area. Environmental impacts from presale seismic activity, exploration drilling, and placement of platforms and pipelines would not occur. Activity and environmental impacts from development on leases purchased during past lease sales would continue. Potential effects on the Pacific OCS Region as a result of spills of tankered Alaska OCS oil under the proposed action would be eliminated.

Valuation of Option 3. The net social value resulting from anticipated hydrocarbon production under this option is estimated to be \$478 million in the Base Case and \$4.3 billion in the High Case. Additional microeconomic benefits are estimated to be \$162 million in the Base Case and \$1.1 billion in the High Case.

Environmental Impacts Associated with Option 3. This option is examined in the programmatic final EIS as part of Alternative 3.

Holding only one sale in the Beaufort Sea as proposed in this option should result in a lower level of impacts to the North Slope Borough and other south-central Alaska communities and a lower level of potential impacts on subsistence harvests and social networks due to a smaller amount of oil being shipped out of the Port of Valdez by tanker.

Fewer oil spills and OCS activity in the Beaufort Sea should result in a lower level of impact to diving ducks and other marine birds and mammals, but the relatively small difference in expected activity between this option and the option of holding two sales should lead to similar kinds and levels of impact for water quality, fish resources, coastal and seafloor habitats, archeological resources, and recreation and tourism.

Fewer lease sales in the Alaska OCS Region could be expected to reduce slightly the amount of oil produced and transported, which would result in a diminished but not measurable reduction in tanker traffic and a slightly reduced risk of tanker accidents affecting the Pacific Coast. The potential impacts of tanker spills in the Pacific OCS Region are summarized in the discussion of Option 1.

Valuation of Option 4. The net social value resulting from anticipated hydrocarbon production under Option 1 or Option 3 would not change if this option is chosen (see explanation in appendix 2).

Environmental Impacts Associated with Option 4. This option is examined in the programmatic final EIS as part of Alternative 4.

The adoption of either the 500-block or 416-block exclusion considered under this option would not alter the overall impacts on the planning area that are discussed under Option 1 or 3 because the anticipated production and levels of activity assumed for those options would be the same. However, no oil and gas activity could occur in the area excluded and thus, any direct impacts to resources in the area excluded would be eliminated. Activity in the area remaining for leasing could result in oil spills that still might have some effect on the resources in the area excluded.

Chukchi Sea/Hope Basin

Selected Comments

Alaska's Division of Governmental Coordination reiterated appreciation that the area along the Chukchi Polynya has been excluded as previously recommended by the State. The President of the Native Village of Point Hope cited concerns about environmental effects and expressed opposition to the Proposed Program on behalf of the animals, people, and nature of the region. The Mayor of the North Slope Borough reiterated general opposition to offshore oil and gas activity. The Bering Straits Coastal Resource Service Area cited concerns about environmental effects and recommended that onshore oil and gas and coal development precede any offering of offshore oil and gas leases. The Kotzebue IRA cited concerns about the ability to adequately respond to offshore oil spills in the arctic and expressed continued opposition to proposed leasing in the Chukchi Sea/Hope Basin area.

The Alaska Eskimo Whaling Commission (AEWC) recommended incorporation of the Beaufort Sea Sale 144 mitigating measures and suggested a number of additional steps designed to protect marine resources and subsistence activities consistent with the Marine Mammal Protection Act and to minimize conflicts with subsistence users. Maniilaq Association (Kotzebue) cited numerous environmental concerns and strongly recommended no leasing in the Chukchi Sea/Hope Basin area. The AMCC cited previous comments recommending no leasing in this area and stated that no new knowledge to support scheduling a sale in the next 5-year program has emerged since the most recently proposed sale was canceled in 1995. The Coastal/Oceans forum of the Sierra Club expressed opposition to leasing in this area.

The API and the AOGA endorsed the Alaska lease sales scheduled in the Proposed Program. ARCO Alaska commented that it is interested in evaluating all of the proposed leasing areas but currently has extremely low interest in Chukchi Sea/Hope Basin. BP Exploration (Alaska) Inc. endorsed the Chukchi Sea/Beaufort Sea boundary adopted in the Draft Proposed Program. Phillips and Texaco cited previous comments specifically endorsing the proposed sale in this area, and Marathon referred to previous comments that expressed general interest in the area.

The DOE commented that Alaska OCS resources potentially can make a great contribution to U.S. energy supplies in the long run.

Additional information concerning comments—including statements offered at public meetings held by the MMS during the comment period following issuance of the Proposed Program—is provided in appendix 1.

Options

- (1) Proposal as adopted for Proposed Program—sale in 2002 in program area (map 7)
- (2) No sale
- (3) Sale in 2002 excluding Hope Basin portion of program area
- (4) Other

Valuation of Option 1. The net social value resulting from anticipated hydrocarbon production under this option is estimated to be \$89 million in the Base Case and \$8.1 billion in the High Case. Additional microeconomic benefits are estimated to be \$161 million in the Base Case and \$2.2 billion in the High Case.

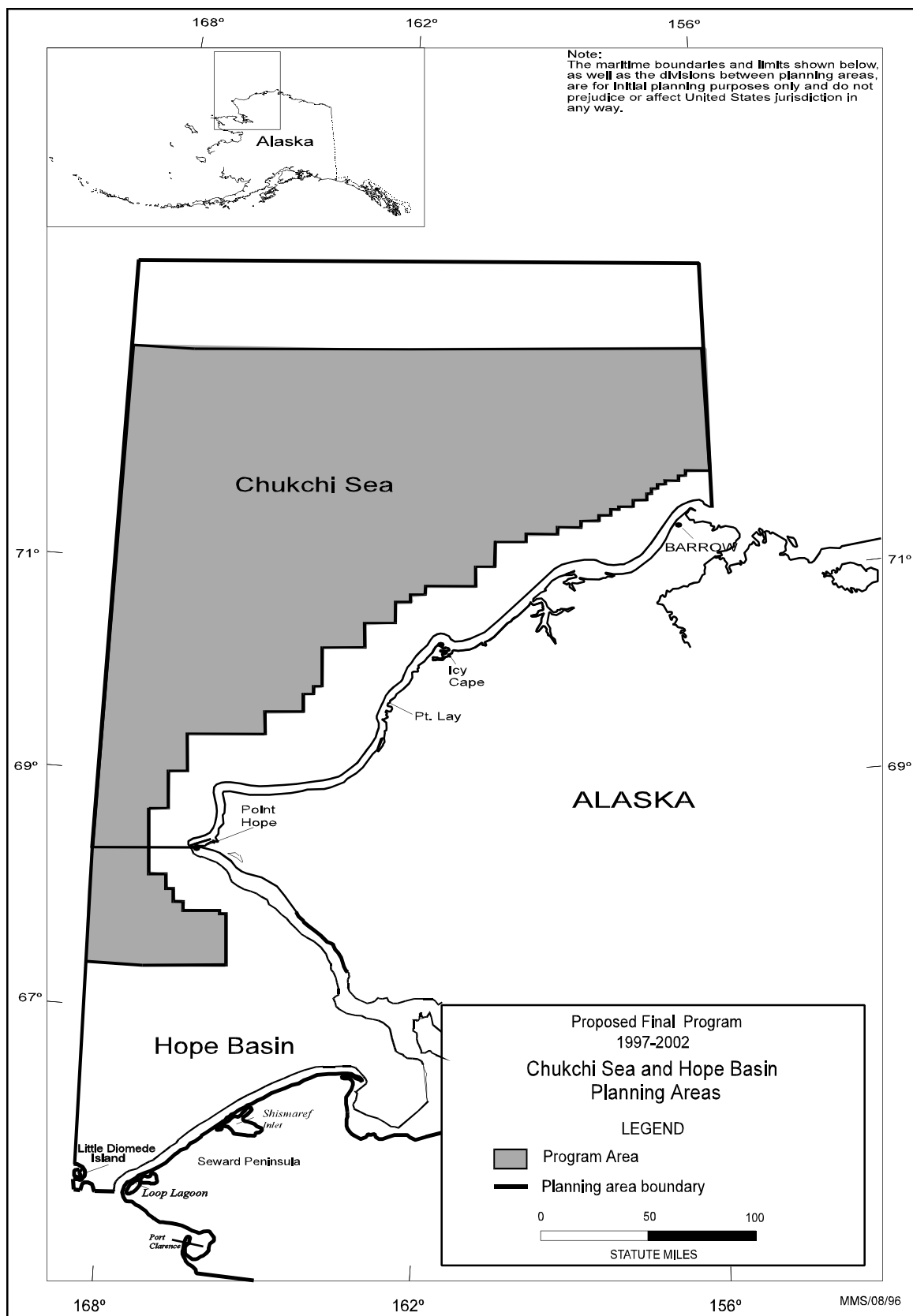
Environmental Impacts Associated with Option 1. This option is examined in the programmatic final EIS as part of Alternative 1.

A combined Chukchi Sea and Hope Basin lease sale would result in most of the resulting activity taking place in the Chukchi Sea, and the percentage of the activity that could take place in the Hope Basin cannot be determined.

Some pollutants in the immediate vicinity of offshore activities could have elevated levels above ambient conditions for a short time.

Sublethal effects would occur on fin, humpback, right, blue, sei, sperm, gray, and bowhead whales due to noise. Primary effects on beluga whales would be due to noise (especially from icebreaking and other marine-vessel traffic) and from oil spills. Helicopter flights and vessel traffic should not disturb seal populations. Oil spills could result in some mortality among newborn or severely stressed adult ice seals. Adult walrus should experience few fatalities from oil spills.

Air traffic might cause limited disturbance to shorebird populations. Abandonment of threatened arctic and endangered American peregrine falcon nests could occur, and activities are expected to disturb few nesting eagles. Impacts to diving ducks from oil spills could result in losses to populations occupying open-water habitats farther offshore



Map 7. Chukchi Sea and Hope Basin Planning Areas

in spring. Oil spills contacting most goose species would be expected to cause minor losses. Disturbance and mortality of seabirds from spilled oil could require several breeding generations for recovery.

Impacts on sociocultural systems would be centered predominantly within the Northwest Arctic Borough, primarily because of oil spill impacts to harvests from oil spills. Disruption of Inupiat subsistence harvests, especially of the bowhead, could affect task groups and sharing networks among kinship groups and communities.

Potential effects on the Pacific Region as a result of spills of tankered Alaska OCS oil are discussed under Beaufort Sea Option 1 above.

Valuation of Option 2. The total net value of benefits resulting from anticipated hydrocarbon production under this option would be zero since there would be no activity.

Environmental Impacts Associated with Option 2. This option is examined in the programmatic final EIS as part of Alternative 2.

The choice of this option would result in a lack of activities associated with other options proposing a sale in the planning area. Environmental impacts from presale seismic activity, exploration drilling, and placement of platforms and pipelines would not occur.

There are no existing OCS leases or intervening lease sales scheduled that could result in activity in the absence of the proposed sale. Potential effects on the Pacific Region as a result of spills of tankered Alaska OCS oil under the proposed action would be eliminated.

Valuation of Option 3. The net social value and additional microeconomic benefits resulting from anticipated hydrocarbon production under this option would be identical to those of Option 1 (see explanation in appendix 2).

Environmental Impacts Associated with Option 3. This option is examined in the programmatic final EIS as part of Alternative 4.

If a sale is held only in the Chukchi Sea portion of the program area, excluding the Hope Basin portion, all activity would take place in the Chukchi Sea area, and the levels of activity would be the same as postulated for a Chukchi Sea/Hope Basin sale.

Because the levels of activity expected in the Chukchi Sea from this option would be largely indistinguishable from those expected as a result of holding a combined sale, the environmental impacts would be essentially the same in level and types as described in Option 1.

Cook Inlet/ Shelikof Strait

Selected Comments

Comments on the Proposed Program that were submitted by Alaska's Division of Governmental Coordination did not refer directly to this area but did mention looking forward to working closely with the MMS and other stakeholders during review of individual lease sale proposals. In a letter dated April 1, 1996, concerning Cook Inlet Sale 149 in the 5-year program for 1992-1997, the Governor cited resource values,

potential environmental impacts, and the opposition of local populations in stating that he did not believe that sale is right for the area. He further stated that his position on Sale 149 would not set a precedent for any other offshore lease sales in Alaska. Kodiak Island Borough cited its participation in the Alaska Regional Stakeholders Task Force and stated no objections to the proposed sale in 1999.

The AMCC cited previous comments recommending no leasing in this area. The Coastal/Oceans Forum of the Sierra Club expressed opposition to leasing in this area.

The API and the AOGA endorsed the Alaska lease sales scheduled in the Proposed Program, and the AOGA recommended modifying the proposed schedule if Sale 149 is not held before the current 5-year program ends in July 1997. ARCO Alaska expressed a general interest in all Alaska areas that are proposed for leasing and suggested revising the Alaska schedule if Sale 149 is delayed past July 1997. Chevron and Phillips cited previous comments specifically endorsing the proposed Cook Inlet/Shelikof Strait sale, and Marathon cited previous comments expressing general interest in the area.

The DOE commented that Alaska OCS resources potentially can make a great contribution to U.S. energy supplies in the long run.

Additional information concerning comments—including statements offered at public meetings held by the MMS during the comment period following issuance of the Proposed Program—is provided in appendix 1.

Options

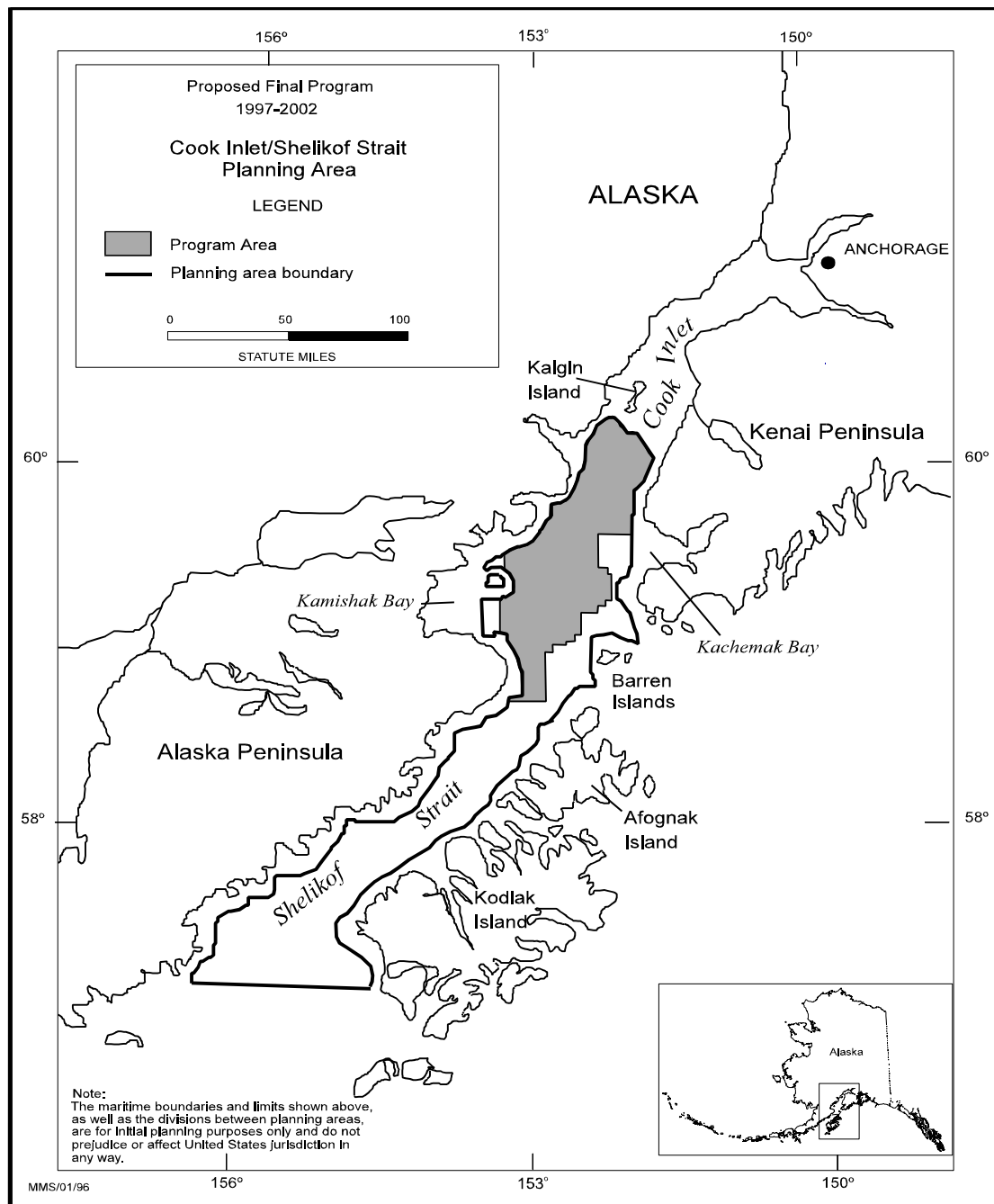
- (1) Proposal as adopted for Proposed Program—sale in 1999 in program area (map 8)
- (2) No sale
- (3) Other

Valuation of Option 1. The net social value resulting from anticipated hydrocarbon production under this option is estimated to be \$30 million in the Base Case and \$1.4 billion in the High Case. Additional microeconomic benefits are estimated to be \$17 million in the Base Case and \$231 million in the High Case.

Environmental Impacts Associated with Option 1. This option is examined in the programmatic final EIS as part of Alternative 1.

Drilling discharges could cause a change in water quality in marine and coastal waters, although pollutant concentrations are not likely to exceed water-quality criteria outside a 100-meter radius. Discharges would reduce water quality on considerably less than 1 percent of the area. A recent MMS-sponsored study of Cook Inlet water quality found that Cook Inlet has very low environmental concentrations of hydrocarbons and that sediments and water are generally free from toxicity. These findings suggest that major human activities such as commercial fishing and offshore oil and gas production since 1959 in State waters have had no significant effect on water quality in Cook Inlet.

There could be increases of nitrogen oxide concentration at the shoreline during exploration and production. Increased concentrations of sulfur dioxide and volatile organic



Map 8. Cook Inlet/Shelikof Strait Planning Area

compounds from spilled oil are expected to be less than from normal operations and last only a short period.

An oil spill near a sea lion rookery is likely to contact up to 50 percent of the local population. Adult mortality is not likely to occur, but considerable pup mortality could result, accelerating the current population decline. Helicopter flights and vessel traffic should not disturb most of the seal populations. Oil spills could result in some mortality among newborn or severely stressed adult seals.

Oil spills are expected to affect less than 5 percent of the peregrine falcon population, and mortality is expected to be minimal. Entanglement in debris and ingestion of plastics should be minimal. The effect of air traffic is likely to be limited to within 0.5 kilometer of the flight path. Construction activities could cause a reduction in shorebird productivity. Routine operations are not expected to cause impacts to diving ducks in spring and winter/spring concentration areas. Routine offshore activities could affect up to a few hundred individuals of geese populations. There could be a disturbance and mortality of seabirds, the major impact-producing factor being spilled oil.

Oil spills contacting migratory salmon populations could have adverse impacts on small groups. The numbers affected would be small in proportion to the total, and any oil spill should have only a small-scale, small-area, and short-term effect. Exploration and development are not likely to have an appreciable effect on groundfish populations. Shellfish populations might be displaced from very small habitat areas by drilling discharges and offshore construction. No appreciable effect on regional shellfish populations is expected.

The primary effects on wetland-estuarine habitats are expected to come from pipeline-landfall construction and oil spills. Turbidity effects from pipeline burial are expected to be short term. Oil spill contamination would have local adverse effects on the diversity or productivity of invertebrate communities.

If oil spills occurred, a dramatic increase in social stress in subsistence communities could result, producing an extreme sense of loss and dislocation. Changes in subsistence harvests from oil spills would not be expected to last more than 1 year, with effects to the sharing networks and task group structures likely to be small and intermittent.

Offshore oil and gas operations could impact commercial fishing operations, possibly resulting in a loss of catch and direct employment and damage or loss of fishing gear. A large spill could result in a loss of \$9-43 million per year to south Alaska (Cook Inlet and Gulf of Alaska) fisheries for 2 years following the spill.

Impacts on recreation and tourism would be the interruption of ocean views by platforms and rigs and disturbances caused by noise and wave action from helicopters and marine-support vessels. Additional impacts could result from the accidental deposition of trash and debris that could reach the shoreline. Also, the fouling of the beaches from an oil spill on the west side of the Kenai Peninsula could disrupt sport fishing and camping. Scenic resources on shorelines along the Alaska Peninsula could be affected for as long as a summer season from a large oil spill.

Potential effects on the Pacific Region as a result of spills of tankered Alaska OCS oil are discussed under Beaufort Sea Option 1 above.

Valuation of Option 2. The total net value of benefits resulting from anticipated hydrocarbon production under this option would be zero since no activity would take place.

Environmental Impacts Associated with Option 2. This option is examined in the programmatic final EIS as part of Alternative 2.

The choice of this option would eliminate activities associated with other options proposing a sale in the planning area. Environmental impacts from presale seismic activity, exploration drilling, and placement of platforms and pipelines would not occur. Activity and environmental impacts from development on leases purchased as a result of a scheduled intervening lease sale could take place. Potential effects on the Pacific Region as a result of spills of tankered Alaska OCS oil under the proposed action would be eliminated.

Gulf of Alaska

Selected Comments

Alaska's Division of Governmental Coordination noted that the nearshore area between Cross Sound and Dry Bay and tracts at Fairweather Ground are included in the program area and requested that those areas be seriously considered for deferral during the evaluation and decision process for the proposed lease sale. The AMCC cited previous comments recommending no leasing in the Gulf of Alaska area based on local opposition, declining industry interest, and the cancellation of the planned State sale in this area. The Coastal/Oceans Forum of the Sierra Club expressed opposition to new leasing in this program area.

The API and the AOGA expressed support for the Alaska lease sales scheduled in the Proposed Program. The AOGA recommended modifying the proposed schedule if Sale 158 in the 5-year program for 1992-1997 is not held before that program ends in July 1997. ARCO Alaska expressed a general interest in all Alaska areas that are proposed for leasing and suggested revising the Alaska schedule if Sale 158 is delayed past July 1997. Phillips cited previous comments specifically endorsing the proposed Gulf of Alaska sale, and Marathon cited previous comments expressing general interest in the area.

The DOE commented that Alaska OCS resources potentially can make a great contribution to U.S. energy supplies in the long run.

In response to a request for interest in proposed Alaska OCS lease sales remaining on the 5-year schedule for 1992-1997 that was published in the *Federal Register* on April 10, 1996, the MMS received indications from industry that there was no interest in leasing in the Gulf of Alaska at that time but the area should continue to be analyzed and considered for the 5-year program for 1997-2002. On May 6, 1996, the MMS announced that it would not hold Sale 158 and would continue to consider the Gulf of Alaska in the formulation of the 5-year program for 1997-2002.

Additional information concerning comments—including statements offered at public meetings held by the MMS during the comment period following issuance of the Proposed Program—is provided in appendix 1.

Options

- (1) Proposal as adopted for Proposed Program—sale in 2001 in program area (map 9)
- (2) No sale
- (3) Other

Valuation of Option 1. The net social value resulting from anticipated hydrocarbon production under this option is estimated to be negligible in the Base Case and \$165 million in the High Case. No additional microeconomic benefits are assumed in the Base Case, and additional microeconomic benefits are estimated to be \$55 million in the High Case.

Environmental Impacts Associated with Option 1. This option is examined in the programmatic final EIS as part of Alternative 1.

Activities resulting from the proposed sale could lower water quality near those activities for a short time.

An oil spill near a sea lion rookery in the western Gulf of Alaska in summer could result in mortality among pups and stressed adult seals.

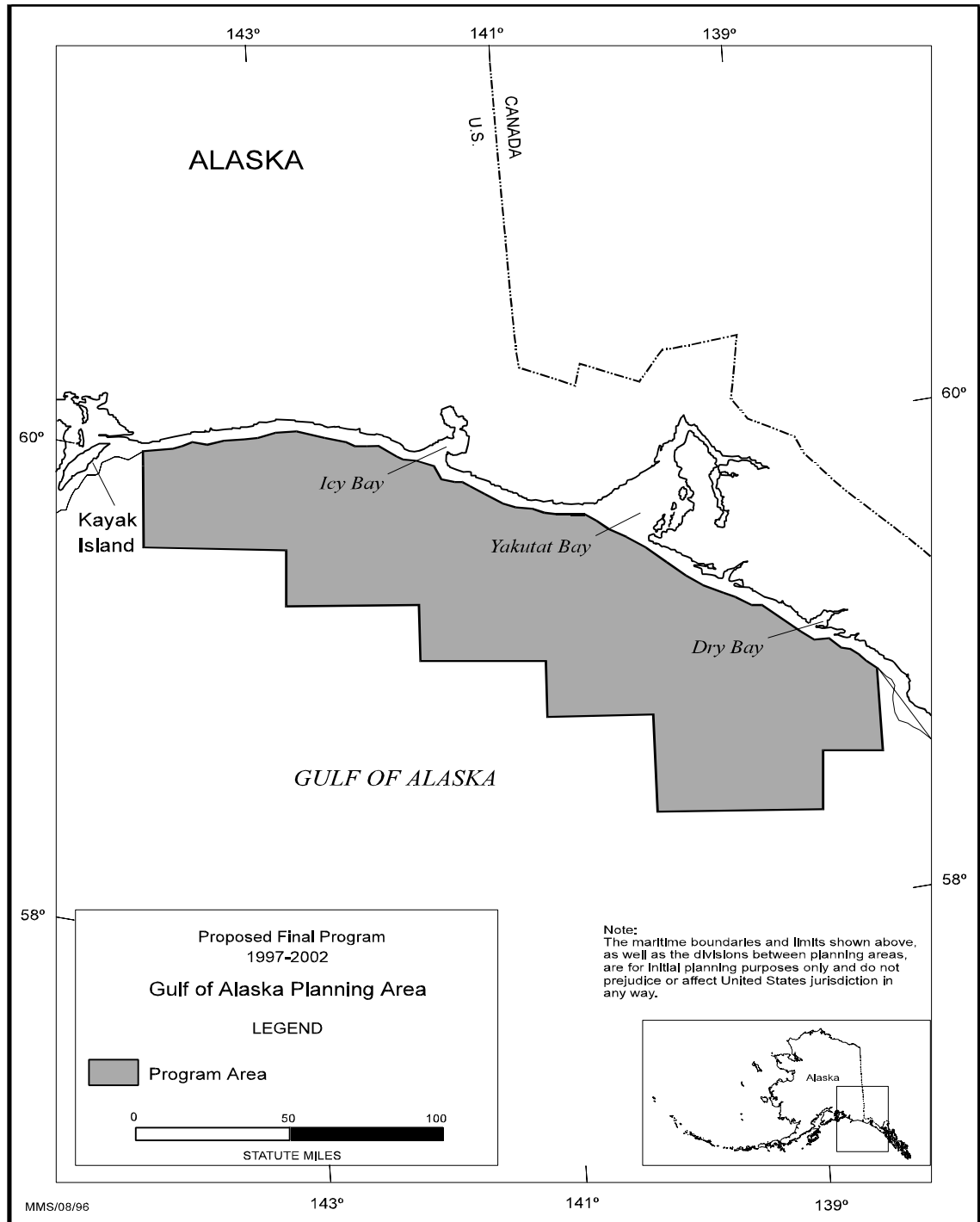
Oil spills would affect little of the peregrine falcon population, and mortality should be minimal. Entanglement in debris and ingestion of plastics are expected to be minimal. If there are multiple, large-scale tanker spills in the Gulf of Alaska, where the bald eagle population is concentrated, they could cause mortality potentially involving a loss of 50 to 150 individuals. Routine operations are not expected to cause measurable impacts to diving ducks in spring and winter/spring concentration areas. Routine offshore activities could affect up to a few hundred individuals of geese populations. There could be a disturbance and mortality of seabirds, primarily from impacts of spilled oil.

Oil spills contacting migratory salmon populations could have adverse impacts on small groups. Exploration and development are not likely to have an appreciable effect on groundfish populations. Shellfish populations might be displaced from very small habitat areas by drilling discharges and offshore construction.

If oil spills occurred, a dramatic increase in social stress would be expected in subsistence communities, producing a sense of loss and dislocation. Changes in subsistence harvests from oil spills would not be expected to last more than 1 year, with effects to the sharing networks and task group structures likely to be small and intermittent. Effects include reducing the availability or accessibility of important subsistence resources.

Offshore oil and gas operations could cause impacts to commercial fishing operations. Operations could cause a loss of catch, loss of direct employment, and damage or loss of fishing gear. A large spill could result in a loss of \$9-43 million per year to south Alaska (Cook Inlet and Gulf of Alaska) fisheries for 2 years following the spill.

Potential effects on the Pacific Region as a result of spills of tankered Alaska OCS oil are discussed under Beaufort Sea Option 1 above.



Map 9. Gulf of Alaska Planning Area

Valuation of Option 2. The total net value of benefits resulting from anticipated hydrocarbon production under this option would be zero since no activity would take place.

Environmental Impacts Associated with Option 2. This option is examined in the programmatic final EIS as part of Alternative 2.

The choice of this option would eliminate activities associated with a proposed sale in the planning area. Environmental impacts from presale seismic activity, exploration drilling, and placement of platforms and pipelines would not occur. Potential effects on the Pacific Region as a result of spills of tankered Alaska OCS oil under the proposed action would be eliminated.

PACIFIC REGION

Proposed Program Decision

The Proposed Program did not schedule any lease sales in the planning areas of the Pacific OCS Region.

Proposed Final Program Options

No options related to leasing in the Pacific Region are presented for the Proposed Final Program. Comments regarding this region that were received by the MMS following issuance of the Proposed Program were similar to those submitted at previous stages of the 5-year program preparation process, and many respondents referenced their earlier comments (see appendix 1).

GULF OF MEXICO REGION

Proposed Program Decision

The Proposed Program scheduled annual sales in both the Western and Central Gulf of Mexico Planning Areas and one sale in 2001 in a portion of the Eastern Gulf of Mexico Planning Area.

Proposed Final Program Options

Western Gulf of Mexico

Selected Comments

The Texas Natural Resource Conservation Commission commented on potential impacts that leasing in this area could have on Texas ozone nonattainment areas and stated that relevant analysis by the State will be necessary at subsequent steps in the process of OCS leasing and development. The DOE commented that the Proposed Program's lease sale schedule in the Central and Western Gulf of Mexico Planning Areas is responsive to the Nation's current and projected energy supply situation. The NOAA reiterated recommendations to list all blocks with live-bottom and chemosynthetic communities and to provide protective stipulations for those areas. The NOAA also recommended that the values of commercial and recreational fisheries in this area be included in the environmental sensitivity/marine productivity analysis (see part IV.C). The Coastal/Oceans Forum of the Sierra Club stated it is not opposed to new leasing in this area. The API, Chevron, Shell, and Texaco endorsed the Proposed Program schedule of lease sales in the Western and Central Gulf of Mexico areas, and Exxon, Marathon, and Phillips cited previous comments supporting those sales.

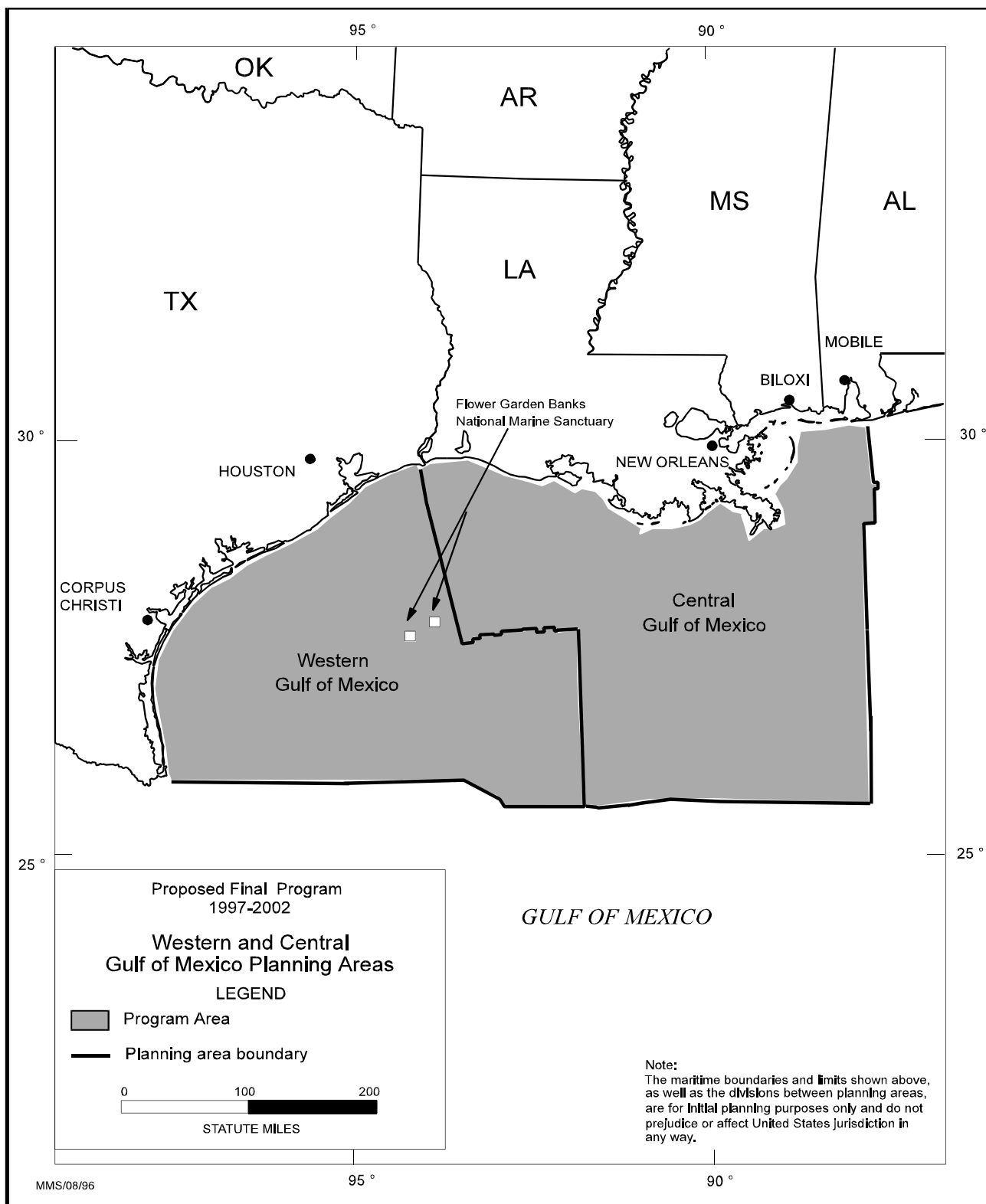
Options

- (1) Proposal as adopted for Proposed Program—annual sales in program area (map 10)
- (2) No sale
- (3) One sale in 1997, 1999, and 2001 in program area
- (4) Other

Valuation of Option 1. The net social value resulting from anticipated hydrocarbon production under this option is estimated to be \$1.1 billion in the Base Case and \$9.8 billion in the High Case. Additional microeconomic benefits are estimated to be \$132 million in the Base Case and \$1 billion in the High Case.

Environmental Impacts Associated with Option 1. This option is examined in the programmatic final EIS as part of Alternative 1.

As a result of activities from the proposed annual sales, there could be changes in water quality around onshore support complexes. Marine waters could be degraded from bottom



Map 10. Western and Central Gulf of Mexico Planning Areas

disturbances, oil spills, and waste discharges. Emissions of pollutants into the atmosphere are expected to have concentrations that would not change onshore air quality.

Cetaceans could be subject to impacts related to routine drilling discharges, noise, and vessel traffic, platform removals using explosives, seismic surveys, and oil spills. There would be no discernible decline in marine or coastal bird populations. The effect on fish resources is expected to be minor on pelagic species such as mackerels, bluefish, and dolphin fish and to reef fish species such as grouper, snapper, scamp, and seabass.

There would be no decline in marine turtle populations and no change in distribution or abundance. Any deaths would be replaced through natural recruitment from the next generation.

Barrier beach configurations should not be altered beyond existing trends except in very localized areas downdrift from jettied or artificially maintained navigation channels.

There should be little damage to low-density chemosynthetic communities. If physical disturbance to high-density communities were to occur, impacts could be severe. There should be little or no damage to the topographic features.

Employment needs would be met primarily by the existing population and available labor force. A minor economic loss to commercial fisheries of the estuary dependent species such as menhaden, shrimp, blue crabs, and oysters could occur for one to two fishing seasons because of oil spills. Oil spills could result in partial closure of a few park and recreation areas. Potential impacts on recreation and tourism could result from the accidental deposition of trash and debris that could reach the shoreline. Tourist losses would be local. Platforms installed offshore as a result of implementation of proposed leasing and related activity, especially those within 25 miles offshore, will attract recreational fishermen and divers.

Valuation of Option 2. The total value of benefits resulting from anticipated hydrocarbon production under this option would be zero since no activity would take place.

Environmental Impacts Associated with Option 2. This option is examined in the programmatic final EIS as part of Alternative 2.

Forgone OCS production is likely to be replaced by imported oil transported by tanker. The imported oil replacing OCS oil and gas is anticipated to enter the United States primarily through the Gulf. The chance that this imported oil would result in one or more oil spills in the Gulf of Mexico region is 58 to 94 percent. Tanker spills are less controllable than pipeline or platform spills and could occur anywhere along tanker routes.

Activity resulting from past sales would continue, including the drilling of exploration wells, placement of platforms and pipelines, and the use of shore bases for support activities. Any reduction in impact-causing factors would be partially offset by the increased use of Gulf routes for tankers importing oil. Spills from such tankers would

result in some degradation of shorebird habitat and lethal effects for fish resources and would cause a dieback of more wetlands and estuarine habitat than would occur as a result of proposed leasing. In addition these spills, should they contact land, could result in a greater number of beach closures than could be expected if the oil were produced domestically.

Valuation of Option 3. The net social value resulting from anticipated hydrocarbon production under this option would be \$670 million in the Base Case and \$5.9 billion in the High Case. Additional microeconomic benefits are estimated to be \$81 million in the Base Case and \$634 million in the High Case.

Environmental Impacts Associated with Option 3. This option is examined in the programmatic final EIS as part of Alternative 3.

Holding an areawide sale every other year in this planning area could result in a smaller number of oil spills from platform and pipeline accidents than under Option 1. Imported oil transported by tanker would substitute for some oil forgone by the reduced level of domestic OCS activity and could generate an increased probability of spills from foreign tankers. This would negate some of the environmental benefits that might otherwise result from the adoption of this option.

There would be a smaller amount of bottom disturbed and less area removed from multiple uses, but the availability of alternative fishing sites for recreational fishermen also would be reduced.

Employment demand is anticipated to be 40 percent lower than for annual sales, resulting in some underemployment or unemployment, causing stress to local agencies that assist individuals who are unemployed or are having financial difficulties. Other resources such as water and air quality, marine and terrestrial mammals, marine and coastal birds, coastal and seafloor habitats, and archeological resources would be affected by similar levels and types of impacts as would result from holding annual sales.

Central Gulf of Mexico

Selected Comments

The Governor of Alabama commented that the State supports a balanced and reasonable OCS leasing program that leads to exploration, development, and production in compliance with relevant Alabama laws, rules, and regulations and is consistent with the State's Coastal Zone Management Program. The DOE commented that the Proposed Program's lease sale schedule in the Central and Western Gulf of Mexico Planning Areas is responsive to the Nation's current and projected energy supply situation. The NOAA reiterated recommendations to list all blocks with live-bottom and chemosynthetic communities and to provide protective stipulations for those areas and also recommended that the values of commercial and recreational fisheries in this area be included in the environmental sensitivity/marine productivity analysis (see part IV.C). The Coastal/Oceans Forum of the Sierra Club stated it is not opposed to new leasing in this area. The API, Chevron, Shell, and Texaco endorsed the Proposed Program schedule of lease sales in the Western and Central Gulf of Mexico areas, and Exxon, Marathon, and Phillips cited previous comments supporting those sales.

Options

- (1) Proposal as adopted for Proposed Program—annual sales in program area (map 10)
- (2) No sale
- (3) One sale in 1998, 2000, and 2002 in program area
- (4) Other

Valuation of Option 1. The net social value resulting from anticipated production under this option is estimated to be \$5.1 billion in the Base Case and \$28 billion in the High Case. Additional microeconomic benefits are estimated to be \$755 million in the Base Case and \$3.6 billion in the High Case.

Environmental Impacts Associated with Option 1. This option is examined in the programmatic final EIS as part of Alternative 1.

As a result of activities from the proposed annual sales, there could be changes in water quality around navigation channels, pipeline canals, and support complexes. Oil spills would represent a localized and low-level impact to coastal waters. Marine waters could be degraded from bottom disturbances, oil spills, and waste discharges. Emissions of pollutants into the atmosphere are expected to be in concentrations that would not change onshore air quality.

Cetaceans could be subject to impacts related to routine drilling discharges, noise, and vessel traffic, platform removals using explosives, seismic surveys, and oil spills. There would be no discernible decline in marine or coastal bird populations. The effect on fish resources is expected to be minor on estuary-dependent species such as menhaden, shrimp, blue crabs, and oysters, on pelagic species such as mackerels, bluefish, and dolphin fish, and on reef fish species such as grouper, snapper, scamp, and seabass.

Wetlands could be eroded along navigation channels from vessel traffic. Barrier beach configurations should not be altered beyond existing trends in very localized areas downdrift from jettied or artificially maintained navigation channels.

There should be little damage to low-density chemosynthetic communities. If physical disturbance to high-density communities were to occur, impacts could be severe over a limited area. There should be little or no damage to topographic features. Impacts to other live-bottom communities are expected to be minor in scope and primarily sublethal in nature.

Employment needs would be met primarily by the existing population and available labor force. Some minimal impacts to traditional occupations and wages could occur as a result of switching to higher paying jobs in the petroleum industry.

A minor economic loss to commercial fisheries of the estuary-dependent species such as menhaden, shrimp, blue crabs, and oysters could occur for one to two fishing seasons, principally because of oil spills. Oil spills could result in partial closure of a few park and recreation areas. Potential impacts on recreation and tourism could result from the accidental deposition of trash and debris that could reach the shoreline. Tourist losses would be local. Platforms installed offshore as a result of

implementation of proposed leasing and related activities, especially those within 25 miles offshore, would attract recreational fishermen and divers.

Valuation of Option 2. The total value of benefits resulting from anticipated hydrocarbon production under this option would be zero since no activity would take place.

Environmental Impacts Associated with Option 2. This option is examined in the programmatic final EIS as part of Alternative 2.

Forgone OCS production is likely to be replaced by imported oil transported by tanker. The imported oil replacing OCS oil and gas is anticipated to enter the United States primarily through the Gulf. The chance that this imported oil would result in one or more oil spills in the Gulf of Mexico region is 58 to 94 percent. Tanker spills are less controllable than pipeline or platform spills and could occur anywhere along tanker routes.

The impacts resulting from the no action option are those associated with the alternative energy substitution for the proposed offshore program. These impacts are associated with oil spills from tankers. Activity resulting from past sales would continue, including the drilling of exploration wells, placement of platforms and pipelines, and the use of shore bases for support activities. This reduction in potential impact-causing factors related to a leasing program would be partially offset by the increased use of Gulf routes for tankers importing oil.

Spills from tankers carrying imported oil would result in some degradation of shorebird habitat and lethal effects for fish resources and would cause a dieback of more wetlands and estuarine habitat than would occur as a result of the implementation of a 5-year program. In addition these spills, should they contact land, could result in a greater number of beach closures than could be expected if the oil were produced domestically.

Valuation of Option 3. The net social value resulting from anticipated hydrocarbon production under this option is estimated to be \$3.1 billion in the Base Case and \$16.8 billion in the High Case. Additional microeconomic benefits are estimated to be \$459 million in the Base Case and \$2.2 billion in the High Case.

Environmental Impacts Associated with Option 3. This option is examined in the programmatic final EIS as part of Alternative 3.

Holding an areawide sale every other year in this planning area could result in a smaller number of oil spills from platform and pipeline accidents. Imported oil transported by tanker would substitute for some oil forgone by the reduced level of activity and could generate an increased probability of spills. This would negate some of the environmental benefits that might otherwise result from the adoption of this alternative.

A smaller number of platforms would result in less bottom disturbed and less area removed from multiple uses, but it would also reduce the availability of alternative fishing sites for recreational fishermen.

Employment demand in the Gulf of Mexico is anticipated to be 40 percent lower than for annual sales, which could result in some underemployment or unemployment, causing stress to local agencies that assist individuals who are unemployed or are having financial difficulties. Other resources such as water and air quality, marine and terrestrial mammals, marine and coastal birds, coastal and seafloor habitats, and archaeological resources would be affected by similar levels and types of impacts as would result from annual sales.

Eastern Gulf of Mexico

Selected Comments

In a letter dated April 15, 1996, the Governor of Alabama commented that the State supports a balanced and reasonable OCS leasing program that leads to exploration, development, and production in compliance with relevant Alabama laws, rules, and regulations and is consistent with the State's Coastal Zone Management Program. He also expressed support for the proposed Eastern Gulf sale in 2001 and encouraged the MMS to further explore the addition of 384 blocks in deep water to the program area as provided in Proposed Program Option 3. In a subsequent letter dated July 30, 1996, the Governor modified his previous comments by requesting that blocks within 15 miles of the coast of Alabama be excluded from leasing consideration. In doing so he cited the resolutions adopted by local governments and groups, as well as the House of Representatives of the Alabama Legislature, expressing concerns about leasing that could lead to offshore oil and gas structures that would be visible from shore (see relevant comment summaries below). In a letter dated May 3, 1996, the Alabama Department of Conservation and Natural Resources expressed support and encouragement for the proposed lease sale in 2001.

The Governor of Florida reiterated that he is pleased that no new leasing is proposed within a 100-mile buffer around the State and stated that he wants Florida to be an active participant in proposed Sale 181. The Florida Department of Environmental Protection commented that it has no objection to the lease sales considered under Proposed Program Option 1 or 3 and encouraged close coordination between the State and the MMS in preparing for Sale 181 in accordance with the OCS Lands Act, NEPA, and the Federal consistency provisions of the Coastal Zone Management Act (CZMA). The Department of Environmental Protection also recommended that increased leasing and development of deep-water tracts be accompanied by adequate environmental studies and appropriate lease stipulations and stated that these issues should be evaluated in detail in the EIS's prepared for specific lease sales.

The Mayor of Bayou La Batre, Alabama, expressed support for leasing in the Eastern Gulf. The City Council of Orange Beach, Alabama, submitted a resolution expressing opposition to further construction of any visible offshore oil and gas structures within 15 miles of the coast and any new leasing that could result in such construction. The South Florida Regional Planning Council expressed support for the Governor's position and commended the Proposed Program for conforming with that position. The West Florida Regional Planning Council stated that the proposed sale is in accord with State plans and the goals and objectives of the Council. The Council's Environmental Planning Staff cited concerns and issues related to citizen opposition, military use, and tourism and recommended establishing a technical advisory committee including Federal, State, and local governments and other parties to address OCS planning.

The Bay County Audubon Society, the Mobile Bay Audubon Society, the Bay County Republican Executive Committee, the Little Lagoon Preservation Society (Gulf Shores, Alabama), and the Legal Environmental Assistance Foundation (Tallahassee, Florida) expressed opposition to leasing in this area, citing environmental and socioeconomic concerns. The Coastal/Oceans Forum of the Sierra Club expressed opposition to the proposed lease sale. The Citizens Association of Bonita Beach, Florida, expressed opposition to leasing off Florida. The Alabama Gulf Coast Area Chamber of Commerce submitted resolutions adopted by itself and the following entities expressing opposition to further construction of any visible offshore oil and gas structures within 15 miles of the coast and any new leasing that could result in such construction: the city councils of Gulf Shores, Orange Beach (also cited above), and Foley; the Commission of Baldwin County; and the Gulf Coast Convention and Visitors Bureau. The Board of Directors of the Romar Place Condominium Association (Gulf Shores) requested that offshore oil and gas rigs be banned from the immediate coastline, stating that rigs within 20 miles of the coast would be visible and would diminish property values and adversely affect tourism in the area. Dauphin Island Sea Lab expressed support for OCS leasing off Alabama.

The DOE commented that areas such as the Eastern Gulf potentially can make a great contribution to U.S. energy supplies in the long run and endorsed the lease sale scheduled in the Proposed Program. The DOE also expressed support for leasing in the expanded area considered as an alternative in the Proposed Program if an appropriate level of consensus can be reached. The Department of the Navy endorsed the Proposed Program, indicating that additional consultation should take place if significant changes are considered. The NOAA recommended that full consideration be given to the State of Florida's concerns regarding leasing in this planning area within 100 miles of the State's coast. The U.S. Fish and Wildlife Service expressed support for leasing within the program area selected in the Proposed Program.

The API commented in favor of Proposed Program Option 3(b)—sales in 1999 and 2001 in the expanded program area including 384 additional deep-water blocks—in order to provide industry the opportunity to explore the gas-prone area in deep water as well as the blocks bordering the Central Gulf of Mexico Planning Area. Marathon expressed support for Option 3(b), stating that the proposed deep-water addition should not have any significant impact on the environment since the area is far from shore and would be associated with ongoing Central Gulf deep-water activities and infrastructure. Mobil and Texaco expressed strong support for Option 3(b). Exxon cited previous comments in support of leasing in the Eastern Gulf and recommended that a sale be scheduled there earlier in the program. Chevron commented in favor of annual areawide leasing in the entire Eastern Gulf but also submitted the following options in order of preference: (1) open all of the planning area beyond 100 miles of Florida to annual or periodic leasing and institute a regional task force to address future expansion into the 100-mile area; (2) adopt Option 3(b); (3) adopt Option 3(a); and (4) adopt Option 1. Shell stated that it is philosophically opposed to Florida's position favoring exclusion of the area within 100 miles of the State but commented in favor of adding the deep-water blocks as proposed and encouraged the MMS to offer the additional acreage as soon as possible.

Over 80 citizens submitted written comments concerning the proposal to lease in this area. Most of those comments cited potential environmental and socioeconomic impacts and expressed opposition to the proposal.

Additional information concerning comments—including statements offered at public meetings held by the MMS during the comment period following issuance of the Proposed Program—is provided in appendix 1.

Options

- (1) Proposal as adopted for Proposed Program—sale in 2001 in program area (map 11)
- (2) No sale
- (3) Expand program area by adding 384 blocks in deep water (map 12) for:
 - (a) Sale in 2001 in program area (map 12); or
 - (b) Sales in 1999 in deep-water portion of program area (map 13) *and* in 2001 in program area (map 12)
- (4) Exclude 22 blocks within 12 statute miles of the 3-mile limit of Alabama State waters (i.e., 15 miles from shore) from the program area to be considered for lease sale in 2001 under Option 1 (map 14) or Option 3 (map 15)
- (5) Other

Valuation of Option 1. The net social value resulting from anticipated hydrocarbon production under this option [including Option 1(a)] is estimated to be \$136 million in the Base Case and \$582 million in the High Case. Additional microeconomic benefits are estimated to be \$22 million in the Base Case and \$64 million in the High Case.

Environmental Impacts Associated with Option 1. This option is examined in the programmatic final EIS as part of Alternative 1.

Emissions from OCS activities, especially those in deeper waters, would not be a primary cause of any onshore area exceeding air-quality standards. There could be minor, long-term changes in water quality in navigation channels, pipeline canals, and onshore support complexes in eastern Louisiana, coastal Mississippi, and Alabama. Marine waters could be degraded from bottom disturbances, oil spills, and waste discharges. Bottom disturbances from platform and pipeline emplacements and removals, rig activities, and blowouts should result in minor, localized, temporary impacts due to sediment resuspension.

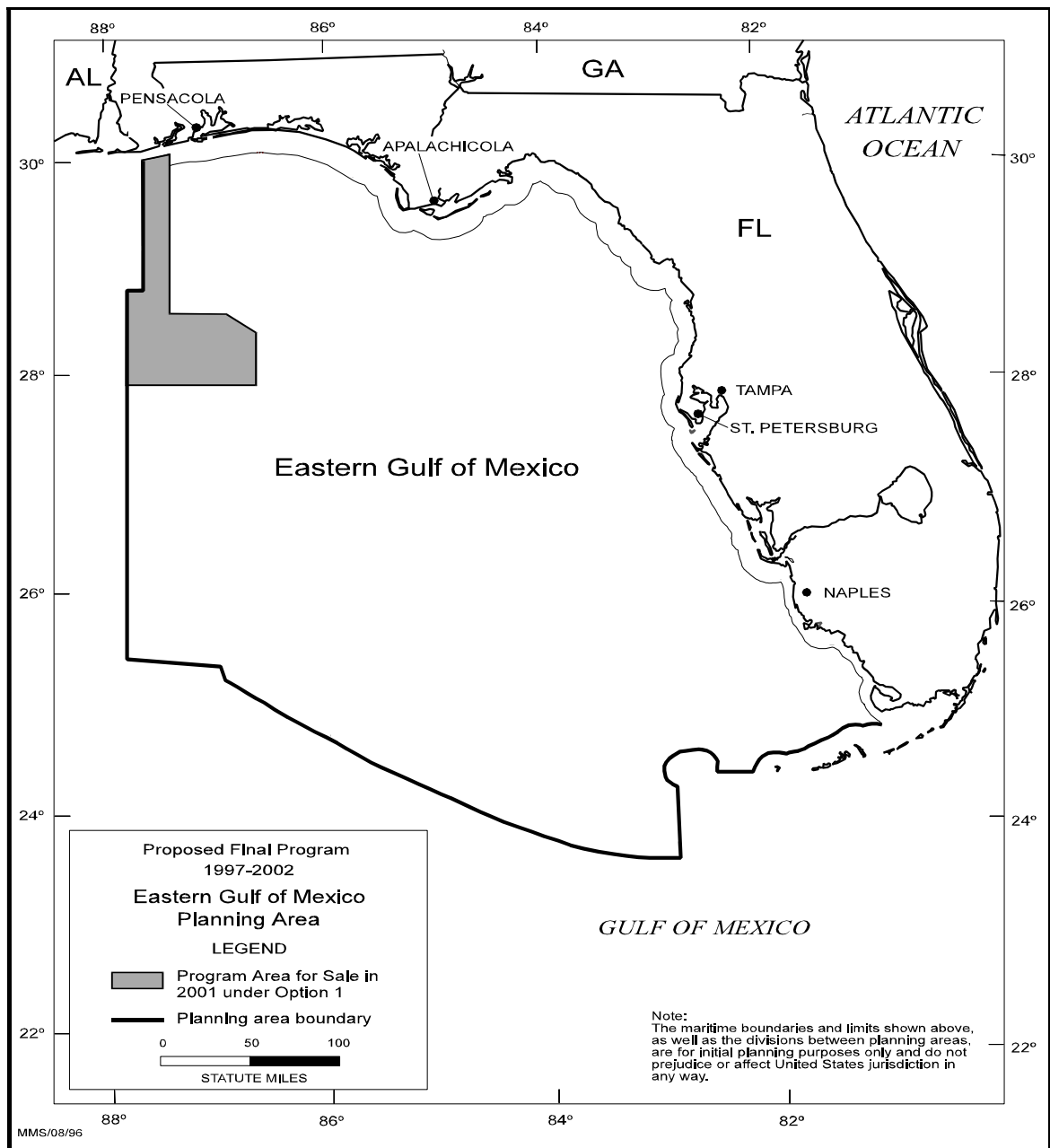
Air and surface traffic and contact with accidentally deposited trash and debris may affect marine and coastal birds. Those affected by oil would be replaced through recruitment from the next generation. There should be no decline in an endangered or threatened bird population. No significant adverse effects to Alabama, Choctawhatchee, and Perdido Key beach mice are expected to occur. Marine mammals would likely experience some sublethal effects and nonfatal exposure to contaminants or debris that are both chronic and sporadic.

The effect on estuary-dependent species such as shrimp and oysters, to pelagic species such as mackerels and dolphin fish, and to reef fish species such as grouper, and seabass is expected to be undetectable. A minor economic loss to commercial fisheries of estuary-dependent species such as menhaden and oysters could occur for one to two fishing seasons.

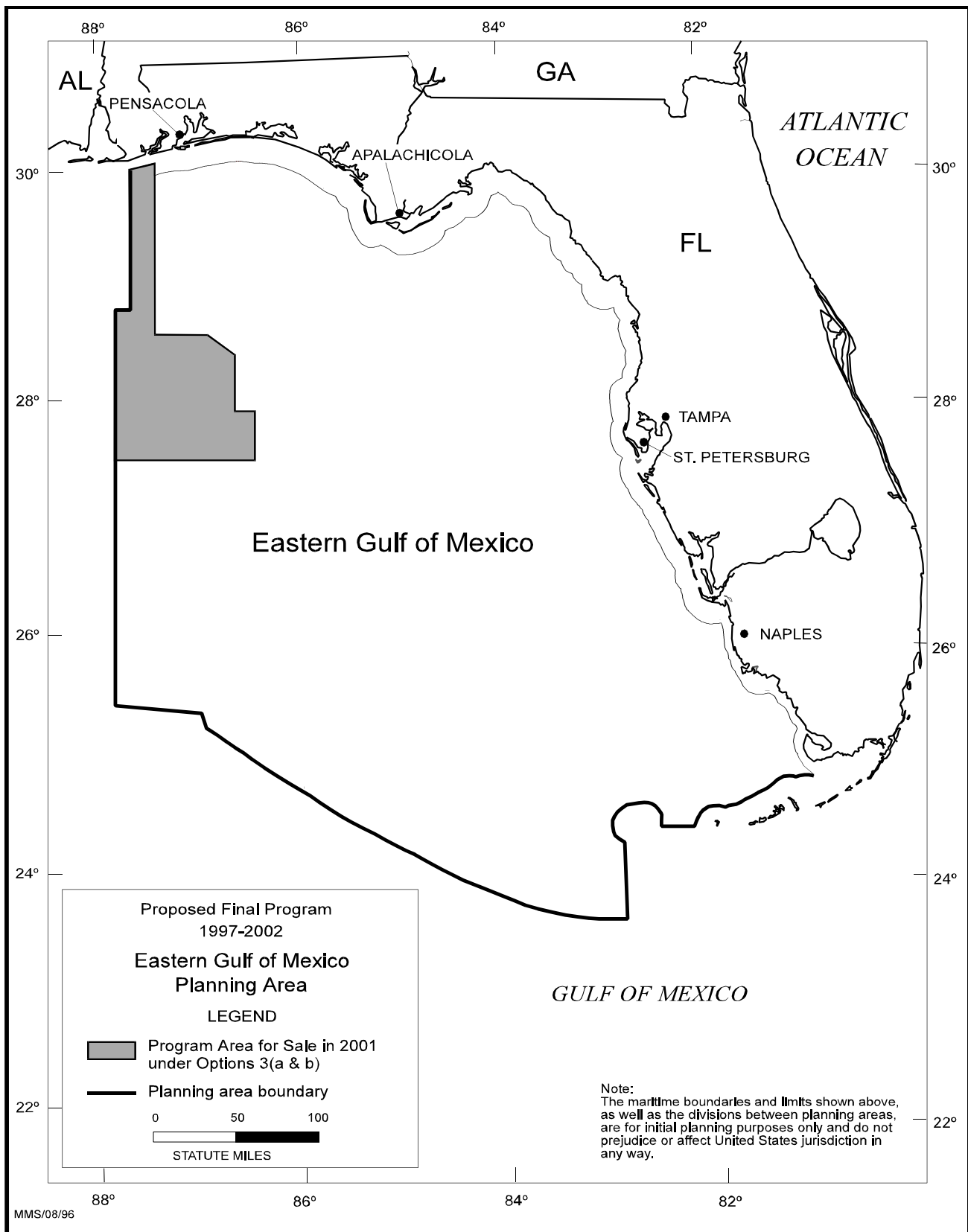
There should be little damage to chemosynthetic communities. The impact to live-bottom communities such as found on the Pinnacle Trend is expected to be minor in

scope and primarily sublethal in nature; the effects are expected to be limited in areal extent.

The States of Louisiana, Mississippi, and Alabama collectively would provide almost 76 percent of the total employment. The least affected State would be Florida, accounting for less than 1 percent of the employment. Gulf Island National Seashore and other coastal beaches along Mississippi and Alabama would be affected by helicopter and boat traffic. Potential impacts on recreation and tourism could result from the accidental deposition of



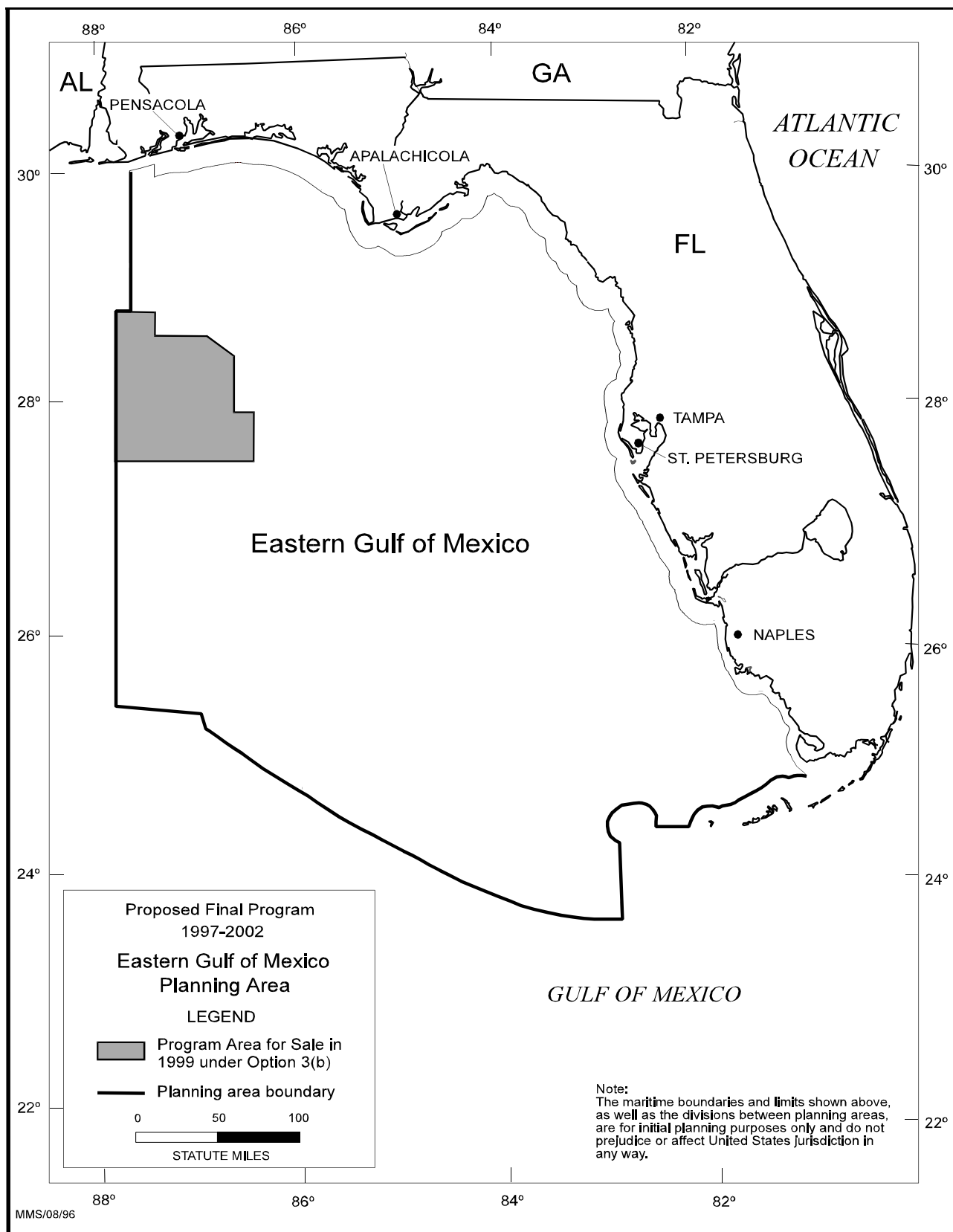
Map 11. Eastern Gulf of Mexico Planning Area - Option 1



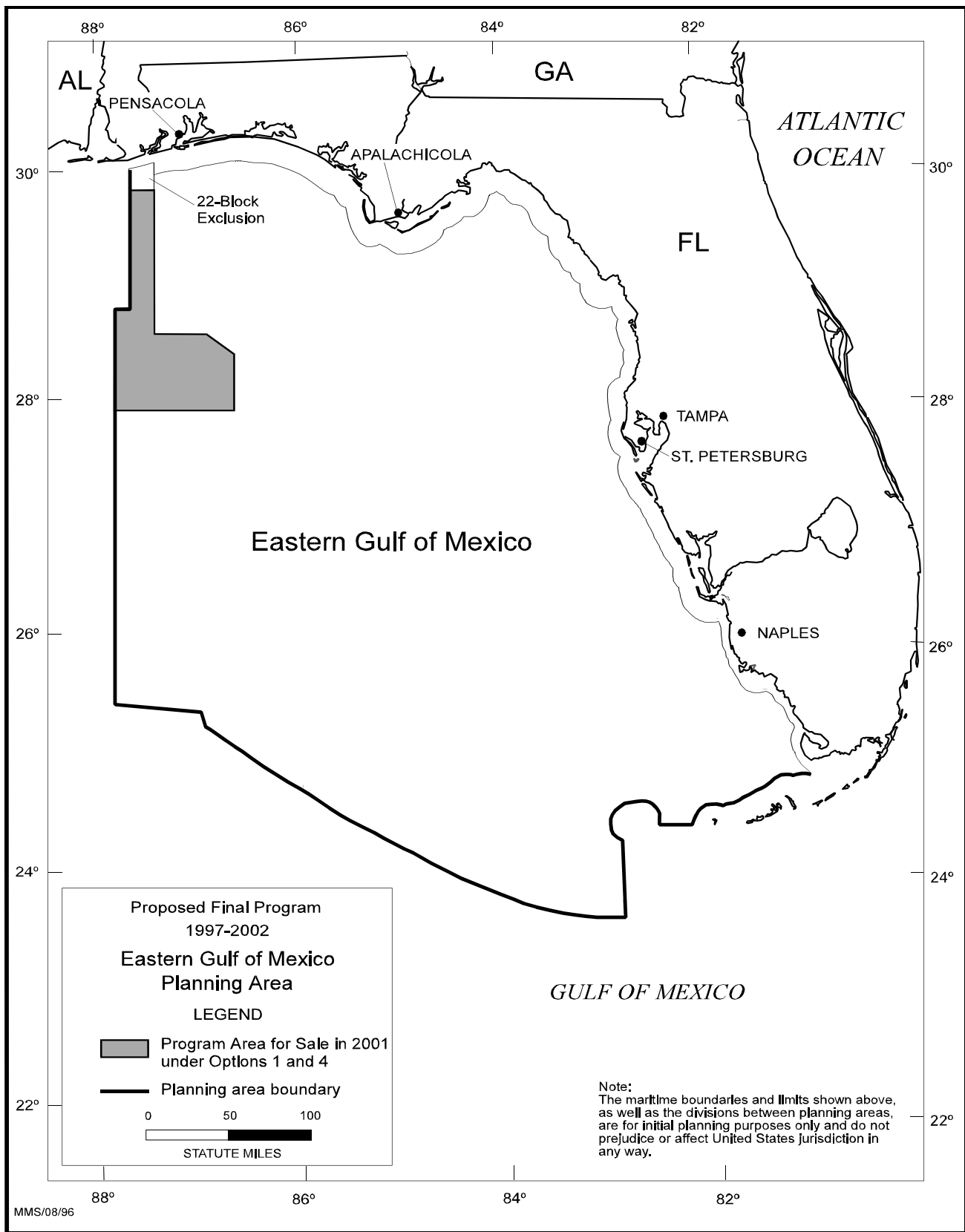
Map 12. Eastern Gulf of Mexico Planning Area - Proposed Expanded Area for Options 3(a & b)

Proposed Final Program Options 55

Proposed Final Program Options 55



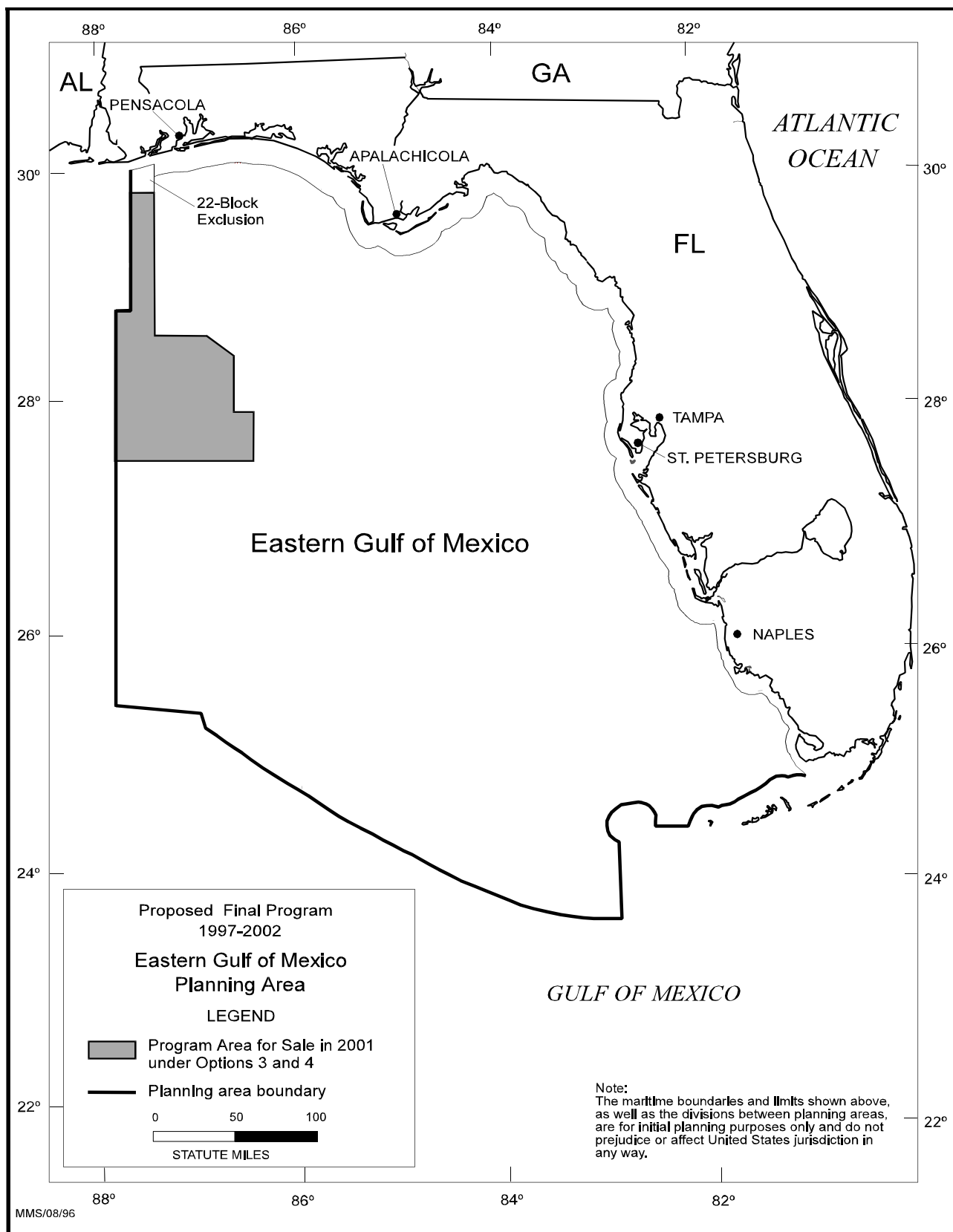
Map 13. Eastern Gulf of Mexico Planning Area - Proposed Deep-water Area for Option 3(b)



Map 14. Eastern Gulf of Mexico Planning Area - Combination of Options 1 and 4

Proposed Final Program Options 57

Proposed Final Program Options 57



Map15. Eastern Gulf of Mexico Planning Area - Combination of Options 3 and 4

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58 OCS Oil & Gas Leasing Program 1997-2002

trash and debris that could reach the shoreline. An oil spill is most likely to affect beaches along the coasts of east Louisiana, Mississippi, and Alabama and result in temporary closure of park and recreation areas.

Valuation of Option 2. The total net value of benefits resulting from anticipated production under this option would be zero since no activity would take place.

Environmental Impacts Associated with Option 2. This option is examined in the programmatic final EIS as part of Alternative 2.

Impacts associated with leasing in this area would not occur. The impact-causing activities that would be eliminated are those that occur in the immediate vicinity of drilling rigs, production platforms, and pipelines. Spillage of oil from OCS operations in the area would not occur, but oil spills originating from operations in the adjacent Central Gulf Planning Area and in this area resulting from the development of leases acquired from past sales could still affect resources depending on wind and currents.

Forgone OCS production is likely to be replaced by imported oil transported by tanker. The imported oil replacing OCS oil and gas is anticipated to enter the United States primarily through the Gulf. The chance that this imported oil would result in one or more oil spills in the Gulf of Mexico region is 58 to 94 percent. Tanker spills are less controllable than pipeline or platform spills and could occur anywhere along tanker routes. Tankers moving through the Eastern Gulf could spill oil in areas not being considered for leasing, thereby causing impacts to parts of the planning area and coastline that would not be affected by leasing activity and accidents.

Valuation of Option 3. The net social value resulting from anticipated production under Option 3(a) is estimated to be \$145 million in the Base Case and \$602 million in the High Case. Additional microeconomic benefits under Option 3(a) are estimated to be \$23 million in the Base Case and \$65 million in the High Case. The net social value resulting from anticipated production under Option 3(b) is estimated to be \$154 million in the Base Case and \$672 million in the High Case. Additional microeconomic benefits under Option 3(b) are estimated to be \$25 million in the Base Case and \$75 million in the High Case.

Environmental Impacts Associated with Option 3. This option is examined in the programmatic final EIS as part of Alternative 5.

The expected effects resulting from the 2001 sale considered under this option would be similar to those under Option 1 but might be slightly greater due to additional activity that could take place as a result of the deep-water expansion of the program area. Addition of a deep-water sale in 1999 also would increase effects only slightly, because activities would be far from shore and would be associated with ongoing Central Gulf deep-water activities and related infrastructure.

Valuation of Option 4. The net social value resulting from anticipated hydrocarbon production if Option 4 is selected along with Option 1 would be \$17 million in the Base Case and \$266 million in the High Case. Additional microeconomic benefits would be \$10 million in the Base Case and \$35 million in the High Case.

If Option 1 is selected in conjunction with Option 3, net social value would be \$26 million in the Base Case and \$287 million in the High Case. Additional microeconomic benefits would be \$11 million in the Base Case and \$36 million in the High Case.

Environmental Impacts Associated with Option 4. This option is examined in the programmatic final EIS as part of Alternative 4.

If the 22-block exclusion is adopted along with the proposal, the potential for nearshore oil and gas activity—and associated impacts—would be eliminated. Activity in deeper waters would be at the same level as expected for the proposal, and deep-water impact types and levels would be the same.

Bottom disturbance from platform placement, causing localized impacts to water quality, would not occur in the excluded area. The visual impacts of rigs and platforms cited by local commenters would be reduced. Impacts to turtle nesting areas along the coast and impacts to historic sites and shipwrecks would be reduced. The opportunity for recreational fishing focusing on stocks enhanced by platform placement in the area would be eliminated. Employment opportunities and demographic change would be reduced slightly.

Adoption of the 22-block exclusion from the expanded alternative program area considered under Option 3 would have similar consequences.

ATLANTIC REGION

Proposed Program Decision

The Proposed Program scheduled no lease sales in the Atlantic Region.

Proposed Final Program Options

No options related to leasing in the Straits of Florida, South Atlantic, and North Atlantic Planning Areas are presented in this decision document. Appendix 1 includes summaries of the comments concerning these areas that were received by the MMS.

Pursuant to NEPA, the Secretary is required to consider alternatives to the proposed action, including one that would schedule lease sales in more areas. The programmatic final EIS analyzes an alternative (Alternative 5) that would schedule more areas—including blocks in the vicinity of the former Hudson Canyon Unit in the Mid-Atlantic Planning Area—which were considered but not selected for leasing in previous proposals for the 5-year program for 1997-2002. This decision document analyzes the range of alternatives considered in the EIS and thus evaluates a Mid-Atlantic lease sale.

Mid-Atlantic

Selected Comments

The Governor of Rhode Island, the Connecticut Department of Environmental Protection, the New York Department of Environmental Conservation, the New Jersey Department of Environmental Protection, and the Governor of North Carolina endorsed the Proposed Program's exclusion of the Atlantic planning areas from leasing consideration. Those commenters and the Delaware Geological Survey said they look forward to working further with the MMS concerning future OCS leasing, and the New York Department of Environmental Conservation expressed support for establishing a working group of affected constituents for the Mid-Atlantic Planning Area. The Virginia Department of Environmental Quality reiterated disappointment that no lease sales have been scheduled for the Atlantic Region in the next 5-year program. The Mayor of Wilmington, North Carolina, commented that the Mid-Atlantic lease sale being analyzed under EIS Alternative 5 could have direct adverse impacts on the Wilmington area.

The DOE expressed hope that the MMS would be able to consult with affected constituents to plan for an actual Mid-Atlantic lease sale by 2002 if an appropriate level of consensus can be reached so industry can justifiably expect to be able to develop leases that would be acquired. The National Aeronautics and Space Administration (NASA) reiterated that it would want another opportunity to comment if a lease sale is scheduled for the Mid-Atlantic. The Coastal/Oceans Forum of the Sierra Club endorsed the decision to schedule no lease sales in the Atlantic Region. Phillips cited previous comments recommending that no sales be scheduled and that drilling be allowed to proceed on existing leases. Marathon cited previous comments stating it has no interest in the Mid-Atlantic until pending litigation is settled. Chevron cited previous comments expressing support for leasing in the Mid-Atlantic

and South Atlantic Planning Areas and indicating specific interest in prospects trending with the Manteo Unit located off North Carolina.

Options

- (1) Sale in 2000 in program area (map 16), limiting the number of blocks offered at the time of the sale to 50
- (2) No sale
- (3) Other

Valuation of Option 1. The net social value resulting from anticipated hydrocarbon production under this option is estimated to be negligible in both the Base Case and the High Case, and no additional microeconomic benefits are estimated in either case.

Environmental Impacts Associated with Option 1. This option is examined in the programmatic draft EIS as part of Alternative 5.

Emissions from any exploration, development, and production activities would have negligible impacts on onshore air quality. Routine discharges and bottom disturbance, both offshore and coastal, should be a restricted point of disturbance.

Routine activities should not affect populations of coastal birds, seabirds, and endangered and threatened birds. Finfish or shellfish could experience sublethal impacts such as reduced biogenic activity or disease. No measurable decline in entire populations is expected.

Impacts to shorelines are expected to occur only at pipeline landfall locations, the maximum area affected extending approximately 50 feet across the beach. Changes in the benthic community from anchoring, drilling wells, and installing pipelines would be local and not expected to last more than 1 to 3 years. Impacts on submarine canyons from muds and cuttings could result in alterations to the canyon communities, including declines in abundance and distribution of canyon species.

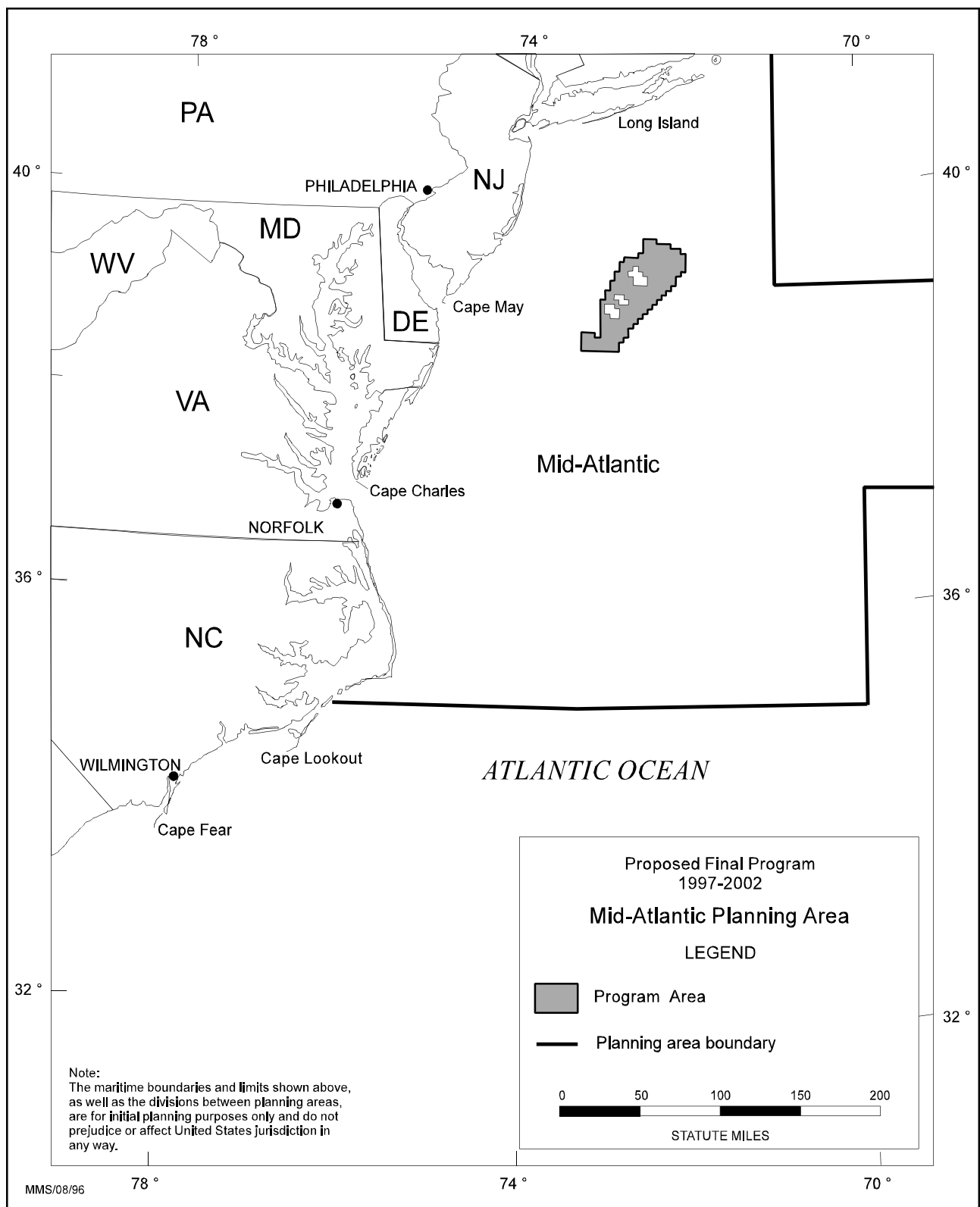
Commercial fisheries should not experience losses in fish and shellfish stocks. Economic losses are expected to be limited to a few fishermen and last less than 1 year.

Potential impacts on recreation and tourism could result from the accidental deposition of trash and debris that could reach the shoreline.

Valuation of Option 2. The total value of benefits resulting from anticipated production under this option would be zero since no activity would take place.

Environmental Impacts Associated with Option 2. This option is examined in the programmatic final EIS as part of Alternative 2.

The Mid-Atlantic is the destination for substantial numbers of crude and product tankers under normal circumstances, but the level of such traffic is not expected to change significantly under the no action option. Most additional tanker traffic needed to replace



Map 16. Mid-Atlantic Planning Area

the oil that would be forgone by not scheduling any lease sales in the 1997-2002 period would enter the United States through Gulf of Mexico and California ports. The threat of foreign tanker-related oil spills to Mid-Atlantic resources would not be affected by this option.

Technical Adjustments to the Configuration of OCS Planning Areas

The Draft Proposed Program adjusted the configuration of OCS planning areas by moving the Chukchi Sea/Beaufort Sea boundary to 156° W. longitude and by adding and deleting whole and partial official protraction diagrams in the following planning areas: Beaufort Sea; Aleutian Arc; Gulf of Alaska; Washington-Oregon; Northern California; Central California; Southern California; and South Atlantic. Those adjustments were depicted in maps 12-15 in the Draft Proposed Program decision document, were reflected in the maps in the Proposed Program and draft EIS, and are reflected in the maps included in this document and the final EIS. The Proposed Final Program includes no options for further technical adjustments to the configuration of OCS planning areas. Updated descriptions of all 26 OCS planning areas are provided in a document entitled *Planning Area Descriptions of the Outer Continental Shelf* (1996) that is available from the MMS Technical Communication Services office.

B. Assurance of Fair Market Value

Relevant considerations for formulating and selecting options to assure the receipt of fair market value for OCS leases and the rights they convey are discussed below. The full range of options available for the Secretary's consideration in deciding on a Proposed Final Program for 1997-2002 is presented. The options selected by the Secretary are summarized in part I.

Proposed Program Decision

The Proposed Program decision was to maintain the current minimum bid level of \$25 per acre with sale-by-sale reconsideration and to continue the two-phase bid adequacy process. On March 29, 1996, the MMS announced that the process for evaluating bid adequacy would be modified by eliminating the three-bid rule (61 *FR* 14162). The modification was effected for Central Gulf of Mexico Sale 157, which was held on April 24, 1996. See part IV.D for further discussion of this modification.

A brief description of existing procedures for assuring the receipt of fair market value, as recently modified, is included in part IV.D of this decision document. Appendix 10 of the April 1992 SID contains background information with more detailed descriptions of the procedures.

Comments

Nine companies and industry groups included comments on fair market value issues in their responses to the *Federal Register* Notice of February 7, 1996, announcing the Proposed Program for 1997-2002. Most of them opposed elimination of the three-bid rule and the selection, for Sale 157, of the option to increase rental rates for deep-water leases. One company recommended elimination of the bid adequacy procedures, instead allowing the competitive market to determine what bids are fair. Three respondents voiced support of the \$25-per-acre minimum bid rate. Two others

suggested that the MMS reconsider lease terms for the Alaska OCS areas, proposing terms more in line with those offered by the State of Alaska on its leases.

Proposed Final Program Options

While no new options explicitly are included for consideration in this Proposed Final Program, the MMS analysis of fair market value issues is continuing. Changes in the minimum bid level, in combination with other policy changes, might be considered in sale-specific documents following completion of MMS analysis relating to the April 1995 Call for Comment on Proposed Policy Options. Implementation of the Outer Continental Shelf Deep Water Royalty Relief and the resulting interim rule (requiring suspension of royalties on any new deep-water leases issued during the next 5 years for most of the Gulf of Mexico OCS acreage) affects internal estimates of the value of affected leases and may lead to one or more additional changes in leasing policy and the terms and conditions for these new leases. Any such changes—or other changes due to new legislation not yet enacted—are likely to be considered and, if adopted, implemented through the decision process for individual lease sales.

The options for the Proposed Final Program decision are listed below. Option 1 would retain current policy toward the minimum bid and the bid adequacy process. The Secretary also has the option to raise or lower the minimum bid level or to make other changes in minimum bid policy. Also, as in previous 5-year programs, in accordance with Section 18(a)(4), modifications may be made to the bid adequacy procedures to incorporate knowledge gained from their actual use in lease sales, to adapt to new legislation, or to respond to changes in the basic, underlying leasing process.

Options

- (1) Maintain minimum bid level at \$25 per acre, subject to sale-by-sale reconsideration, and continue current two-phase bid adequacy process, as modified by announcement of March 29, 1996
- (2) Other

IV. PROPOSED FINAL PROGRAM ANALYSES

This part presents the analyses of section 18 criteria and information used to formulate the Proposed Final Program options presented in part III.

A. Analysis of Energy Needs

The Draft Proposed Program analysis updated the discussion of energy needs in the April 1992 SID for the 5-year program for 1992-1997. The analysis indicated that the outlook for America's energy future had changed only slightly since 1992. It found that projected domestic petroleum production had declined and expected levels of oil imports had risen— trends that will put more strain on the Nation's economy and could place the United States at greater risk of an economic shock like those that have occurred in the past. The analysis further concluded that environmentally sound OCS leasing, conducted in consultation with affected parties, has the potential to provide added supplies of secure, environmentally compatible oil and gas to help meet the Nation's energy needs. A review of that analysis, using updated forecasts from the *Annual Energy Outlook* published by the DOE in January 1996, supports those basic conclusions. Although the current forecasts of demand for imported oil are more optimistic than some previous forecasts, they still show a growth in net oil imports from 45 percent of oil consumption in 1994 to 56 percent in 2015, far surpassing the current record of 46 percent.

While continued dependence on imported oil has national security implications, it is prudent to take the long-term view of this problem. An aggressive lease sale schedule developed without the concurrence of potentially affected parties could provoke permanent leasing moratoria or other policies that would prevent effective development of domestic resources in the future. Currently, this Nation benefits from relatively inexpensive oil imports from many producing nations, and this Administration's initiatives in brokering peace in the Middle East continue to bear fruit. A carefully crafted 5-year program could both contribute to the Nation's energy supply and provide time to address the controversies that have led to bipartisan congressional and executive moratoria on OCS lease sales and development.

The Proposed Program analysis discussed the Department of Energy's National Energy Policy Plan (August 1995), summarized an analysis of energy alternatives to development of OCS oil and natural gas resources, and described regional energy needs. Because little has changed that would affect the validity or currency of that analysis, this section provides only summaries and selected excerpts from the corresponding section in the previous document.

National Energy Policy Plan

The National Energy Policy Plan, entitled *Sustainable Energy Strategy*, presents the Clinton Administration's energy policy. The concept of sustainable development guides the energy policy process and motivates three strategic goals: maximize energy productivity to strengthen the economy and improve living standards; prevent pollution to reduce the adverse environmental impacts associated with energy production, delivery, and use; and keep America secure by reducing vulnerability to global energy market shocks. The environmentally sound development of the Nation's OCS resources will help further the achievement of each goal. Investments in and production of OCS oil and gas generate billions of dollars annually in bonuses,

royalties, and taxes and create thousands of well paying jobs throughout the American economy. Production of offshore resources under proper environmental safeguards poses less risk of an oil spill than does importing foreign oil in tankers. Expanded use of natural gas, including that produced on the OCS, has substantial environmental benefits over other fossil fuels. Production of oil and gas from the OCS directly reduces the amount of oil that must be imported from abroad, much of it from politically unstable regions, thereby lessening the threat to the U.S. economy posed by supply disruptions and higher prices.

In comments on the Draft Proposed Program the DOE referred to the goals and policies of the National Energy Policy Plan and stated explicitly that OCS oil and gas resources ". . . are a part of the Administration's commitment to develop a balanced energy resource portfolio."

Energy Alternatives

Many comments received during the preparation of this and previous 5-year programs have expressed the opinion that the Federal Government should promote energy conservation and the development of alternative or renewable energy resources rather than consider leasing areas of the OCS for potential oil and gas development. Accordingly, the MMS updated the review of energy alternatives performed for the 5-year program for 1992-1997 in a paper entitled *Energy Alternatives and the Environment*, which is available from the MMS Technical Communication Services office and online from the MMS home page (<http://www.mms.gov>). The first major step taken in the review entailed a revised estimate of the most likely response of the economy to a situation in which the Department of the Interior does not schedule any OCS lease sales for the 1997-2002 period. This corresponds to Alternative 2—No Action— in the programmatic draft EIS.

The Most Likely Alternative Energy Mix

Table 2 shows the *most likely* set of energy alternatives that the economy would adopt if the *no action* alternative were chosen (resulting in the loss of oil and gas production that would be estimated to result from leasing during the period 1997 to 2002). The MMS generated the estimates in this table using its market simulation model that was developed to analyze energy alternatives and other economic aspects of the 5-year program. The model and the estimates in the table assume that basic economic decisions in the U.S. economy will continue to be made through the free market system. The government might also impose certain energy alternatives on the economy to accomplish various political and environmental goals. Alternatives that might be imposed by government are discussed later in this part and at greater length in the MMS paper cited above.

Government-Imposed Energy Alternatives and Their Impacts

The U.S. Government or the governments of States like California or those in the Northeast might choose to encourage or mandate use of one or more energy alternatives different from those chosen by the market. Mechanisms that might be used are taxes like a carbon tax or vehicle fuel tax, an integrated energy conservation program, or more specific mandated energy saving measures like automobile fuel

economy standards and the requirement in California and portions of the Northeast that a certain percentage of new

Table 2. Market Response to No OCS Leasing

Sector	% of OCS Production	Quantity Involved	
		Base Case	High Case
Oil			
OCS Production (BBO)	-100	-1.54	-18.83
Onshore Production (BBO)	4	0.05	0.65
Imports (BBO)	88	1.36	16.64
Conservation (BBOE)	5	0.08	0.96
Switch to Gas (BBOE)	3	0.05	0.58
Gas			
OCS Production (Tcf)	-100	-11.12	-29.28
Onshore Production (Tcf)	41	4.58	11.18
Imports (Tcf)	12	1.38	3.25
Conservation (Tcf)	14	1.54	4.31
Switch to Oil (Tcf/BBOE)	33	3.62/0.64	10.54/1.88
Induced Oil Imports (BBO)	NA	0.57	1.65

The Base Case estimates assume a flat, real price of \$18 per barrel (bbl) of oil and \$2.11 per Thousand cubic feet (Mcf) of gas. The High Case estimates assume \$30 per bbl of oil and \$ 3.52 per Mcf of gas.

vehicles sold after a given date be zero emission vehicles. The paper *Energy Alternatives and the Environment* discusses mechanisms for imposing alternatives at greater length. However, regardless of the mechanism chosen, it must operate through an energy alternative such as those examined in the analysis.

Government action is most likely to be directed at vehicle fuels and fuel consumption and electricity generation plants, fuels, and consumption. Narrowly focused measures are more likely than broad measures. In addition any measure favoring a particular energy alternative or set of alternatives probably would have important environmental consequences, especially for air pollution minimization.

Summary of National Energy Needs

Many energy alternatives can and probably will contribute to the U.S. energy future. However, there is no new anticipated energy technology that is likely to make a

significant contribution; indeed, during the span of the new 5-year program and related activities, the effect of all the new and renewable energy alternatives on the distribution of energy sources is expected to be minimal.

In addition, regardless of the attractiveness of some conservation efforts, nothing in the analysis of energy alternatives provides arguments contrary to the continued leasing of OCS oil and natural gas resources at a rate set by market forces. Thus, if conservation efforts are successful, firms will bid for fewer OCS tracts, but OCS resources will still provide a valuable addition to the domestic energy supply. Oil resources of the OCS help to reduce U.S. reliance on oil imports from potentially unstable regions of the world, and OCS natural gas resources provide a significant and potentially growing portion of the cleanest form of fossil fuel.

Regional Energy Needs and Resources

Oil and natural gas account for about two-thirds of U.S. energy consumption. While the precise mix of energy sources varies from region to region, oil and gas are used extensively throughout the entire country. This part of the analysis examines regional energy resource production and consumption patterns and the factors that help shape them.

Table 3 shows, by fuel type, how U.S. energy consumption—a total of more than 80 quadrillion British thermal unit's (Btu) per year—is divided among eight geographic regions. As expected, based on their greater size and population, the Eastern Interior, Atlantic Coast, and Gulf Coast regions make up a significant majority of energy use. However, California and Florida together account for nearly 11 percent of all energy consumed in the United States. Consistent with the discussion above, other alternative and renewable forms of energy—solar, wind, biomass, etc.—generally contribute less than 1 percent of total energy supply in each of the regions. The *Other* category in the table consists almost entirely of nuclear power, especially in the Atlantic Coast region and in Florida, and hydroelectric power, especially in Washington and Oregon (Northwest and Hawaii region). Geothermal energy makes up about 2 percent of California's energy supply.

Petroleum and Natural Gas. Petroleum and natural gas are the predominant energy fuels in use in the United States. In each of the eight regions they account for more than half of the energy consumed as shown in table 3. Coal constitutes nearly one-fourth of the energy consumed, the vast majority of which is used for the generation of electric power. Petroleum and gas are used in a wide range of residential, industrial, and transportation applications as well as for generating electricity.

Although petroleum and gas are used across all eight regions, their production is more geographically limited as shown in figure 1. In the Atlantic Coast, Eastern Interior, Florida, and Northwest and Hawaii regions, consumption is several times larger than production. Although California is a major oil and gas producer, its residents consume more than twice the amount produced. Only in the Alaska, Gulf Coast, and Western Interior regions does the amount of oil and gas produced exceed the amount used. As a whole, the Nation produces just over 50 percent of the oil and about 90 percent of the gas it consumes, the difference is made up with imports. International sources of oil include Canada, South America, the North Sea, Africa, Southeast Asia, and the Middle East. The source of almost all imported natural gas is Canada.

Figure 1 includes oil and gas produced offshore in State waters but does not include oil and gas produced from the Federal OCS, which is similarly concentrated. All OCS production occurs off the coasts of Alabama, Mississippi, Louisiana, and Texas in the Gulf of Mexico and off the coast of California.

Table 3. Energy Consumption by Fuel (Percentage of Total Energy Consumed)

Regions	Coal	Gas	Petroleum	Petroleum and Gas	Other
Atlantic Coast	30	16	39	55	15
Florida	22	12	56	68	10
Gulf Coast	16	37	44	81	3
California	1	33	51	84	15
Northwest & Hawaii	5	12	45	57	38
Alaska	2	63	33	96	2
Western Interior	36	24	32	56	8
Eastern Interior	34	23	34	57	9
United States	23	25	41	66	11

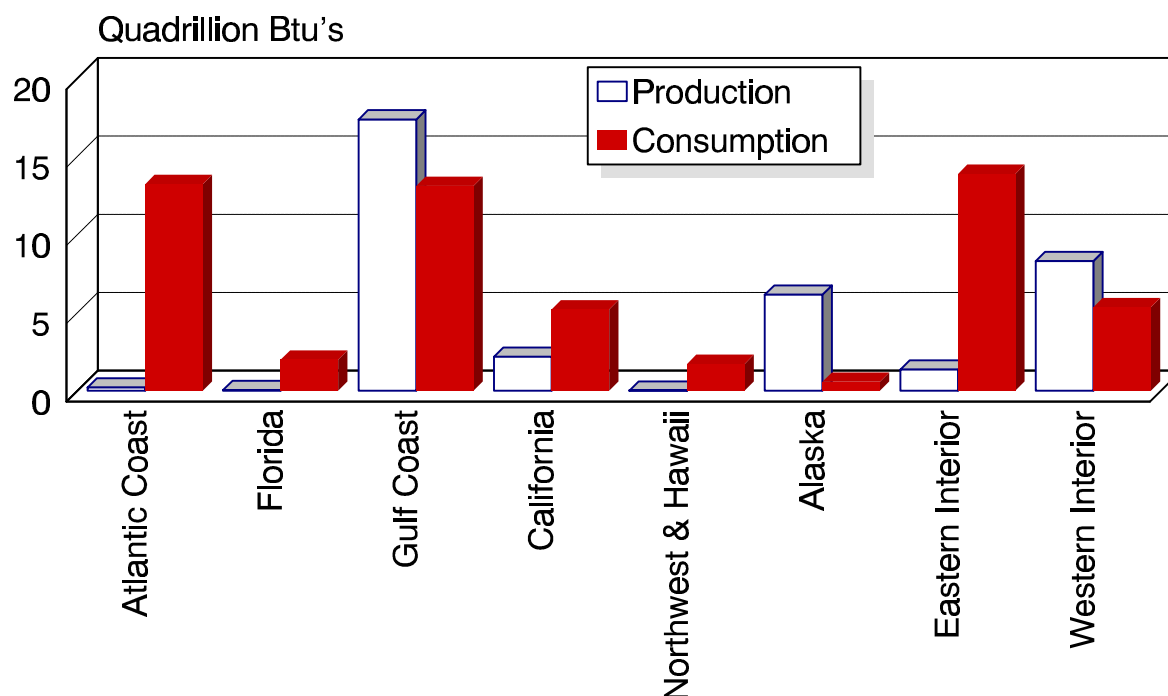


Figure 1. U.S. Oil and Gas Production and Consumption in 1994

B. Analysis of Environmental Concerns

The OCS Lands Act, as amended, includes many provisions calling for environmental protection in managing the Nation's offshore oil and gas resources. The general purposes and policies articulated in the 1978 amendments to the statute point to the importance of applying safeguards to limit the risks of environmental damage and protecting the human, marine, and coastal environments. Specifically, in regard to the 5-year OCS leasing program, section 18 of the law mandates that decisions balance the potential for discovery of oil and gas resources and the potential for adverse environmental impacts. Thus, in developing a 5-year program it is important to solicit comments relating to environmental concerns and to consider and analyze the comments received carefully.

Comments Relating Environmental Concerns

A number of the comments received during the preparation of the 5-year program for 1997-2002 have identified potential impacts associated with OCS oil and gas activities. The predominant concerns that have been raised relate to the risk of accidental oil spills and the ecological and socioeconomic effects associated with oil and gas exploration, development, and production. This decision document and the programmatic final EIS both include summaries of concerns related to the OCS oil and gas program that have been identified by commenters. Chapter I of the programmatic final EIS discusses those concerns in detail.

Environmental Analyses

The Record of OCS Operations

Worldwide, only 2 percent of the oil in ocean waters is the product of oil and gas operations, according to the National Academy of Sciences 1985 study, *Oil in the Sea: Inputs, Fates, and Effects*. Production from the United States OCS contributes less than one-tenth of 1 percent of the oil in ocean waters. About 70 percent of the oil polluting the oceans comes from municipal and industrial wastes and from tanker operations.

Following the Santa Barbara incident of 1969, industry improved technology, and the Federal Government developed more stringent regulation of OCS operations. By law there is a scheduled inspection of each OCS facility subject to environmental and safety regulations at least once a year. Also, the MMS conducts periodic unscheduled onsite inspections of OCS oil and gas facilities. Table 4 shows the volume of OCS oil and condensate produced and the number and volume of spills by year from 1970 - 1994.

The Programmatic EIS

The programmatic final EIS accompanies this program decision document for the Secretary's consideration. The EIS process began with the Notice of Intent to Prepare an Environmental Impact Statement for the Proposed Program that was published in

the *Federal Register* (59 FR 59328) on November 16, 1994, and called for information from interested and affected parties that could be used to determine the appropriate scope of the planned EIS. Scoping continued through the close of the comment period following publication of the Draft Proposed Program (60 FR 155). A draft EIS that analyzed the leasing schedule in the Proposed Program and four alternative leasing schedules was prepared and issued with the Proposed Program. A final EIS that analyzes the same proposal and the four alternatives—some of which have been modified to reflect comments—accompanies this Proposed Final Program decision document (see part III of this decision document and chapter II of the final EIS for descriptions of the proposed action and alternatives).

Additional Environmental Considerations

In preparing the programmatic EIS and performing the environmental analyses required by section 18, the MMS drew on a substantial amount of information and analytic results obtained from its Environmental Studies Program, which has funded approximately one-half billion dollars in studies since 1973. The report MMS 91-0028 lists and describes briefly the scientific studies that have been conducted from 1973 through 1989. Studies conducted since then are listed and described in various Environmental Studies Program Information System (ESPIS) reports. Abstracts of the ESPIS reports are now available online from the MMS home page (<http://www.mms.gov>).

The analyses of social costs and environmental sensitivity/marine productivity presented in part IV.C below also provide useful information concerning the potential effects of oil and gas leasing and related activities under the new 5-year program for 1997-2002.

C. Comparative Analysis of OCS Planning Areas

The required comparative analysis of section 18 factors and considerations for the Proposed Final Program decision is presented below. This analysis addresses the section 18 criteria that lend themselves to quantification as well as those that do not.

Potential benefits of producing oil and gas from the Nation's OCS include reducing the country's international trade deficit and Federal budget deficit, displacing shipments of imported oil by large tankers—thereby reducing associated risks of oil spills, and providing a secure supply of the fuels used by the Nation for production and distribution of virtually all other products. The potential costs include the risk of damage to the marine, coastal, and human environments and the associated effects on the values of other resources and uses.

Factors that are quantified to facilitate comparison among OCS planning areas include social benefits; environmental sensitivity and marine productivity; and regional costs developed for considering the equitable sharing of developmental benefits and environmental risks. The factors that are addressed qualitatively include environmental, ecological, and socioeconomic characteristics that would be extremely difficult or impossible to quantify in a valid and meaningful way; expressions of interest by the oil and gas industry; and relevant laws, goals, and policies identified by affected States. The comments submitted by interested and affected parties and other considerations pursuant to the OCS Lands Act, NEPA, and applicable judicial opinions also are addressed in this analysis.

Social Value

Introduction

The MMS performs a cost-benefit, or *net benefits*, analysis of the value of all available resources in the Proposed Final Program. The analysis examines the benefits, with the accompanying costs, to society associated with OCS oil and natural gas production. The results of the required comparisons of program areas provide one factor in determining the

Table 4. OCS Production and Spill Statistics for 1970-1994 (Crude Oil and Condensate)

Year	Barrels Produced	No. of Spills	Barrels Spilled
1970	354,175,830	13	83,894
1971	418,548,946	244	2,441
1972	411,885,893	205	999
1973	394,729,999	183	23,125
1974	360,594,065	87	24,453
1975	330,237,452	111	761
1976	316,920,109	70	5,023
1977	303,948,240	74	1,084
1978	292,265,042	70	1,525
1979	285,565,538	111	2,629
1980	277,388,975	59	2,833
1981	289,765,405	66	5,869
1982	321,211,457	75	1,140
1983	348,331,243	103	2,557
1984	370,239,014	62	414
1985	389,324,285	81	1,725
1986	389,216,004	51	584
1987	366,141,709	38	242
1988	320,667,424	34	15,973
1989	305,167,655	28	484
1990	324,423,181	39	19,408
1991	315,693,251	37	707
1992	353,726,380	31	2,336
1993	362,675,766	25	159
1994	369,474,307	27	4,808

Source: Federal Offshore Statistics: 1994 (in press)

location and timing of lease sales in the program. In addition to this *relative ranking* of program areas, the MMS performs a *valuation of program alternatives* analysis, which estimates net benefits of anticipated production from each of the five EIS alternatives. (The EIS alternatives consist of the program proposal and four comprehensive groupings of the various region and program area options.) The analysis was summarized in the Proposed Program decision document and, in general, has not changed significantly since then. Therefore, this section focuses on changes in, and implications of, the analysis. Readers who are unfamiliar with the analysis should refer to the previous decision document or to appendix 2, which contains a more detailed description of the methodology and results.

Estimates of Hydrocarbon Resources.

As stated in the decision documents for the Draft Proposed Program and the Proposed Program, the MMS has obtained its resource estimates for the Proposed Final Program analysis from the new methodology and more advanced models used in the National Assessment of 1996. The improved methodology has not produced results that would justify a reconsideration of earlier decisions based on the relative ranking of program area resources. Table 5 shows the new estimates of hydrocarbon resources in blocks anticipated to be available for leasing in the new program under the proposal and under those options that would change the estimates. (Options to exclude the Hope Basin and portions of the eastern Beaufort Sea do not affect estimates of available resources and are not represented in tables 5 and 6. See appendix 2 for discussion of these options.) The National Assessment estimates were developed with the Geologic Resource Assessment program (GRASP) and Petroleum Resources Appraisal Systems Software (PRASS) models, as explained in appendix 2. The new National Assessment also provided the *anticipated production* estimates used for the *valuation of program alternatives*. Results of the valuation of program alternatives are shown with the individual options in part III of this document and in tables 2-3 and 2-4 of appendix 2.

Estimates of Total Net Benefits and Implications

Figure 2 summarizes the quantitative components of the MMS net benefits analysis. Table 6 shows the estimated total net benefits of the resources anticipated to be available in each program area as of July 1997.

The Central and Western Gulf of Mexico have vast existing infrastructure and large amounts of available hydrocarbon resources that contribute to high aggregate net benefit values. Those areas have the most unleased, undiscovered, economically recoverable resources and the highest net social value. In addition the value of these areas has been proven over decades of OCS production. From an energy and economic perspective they should be offered most frequently in the new 5-year program.

While the net benefits to society from anticipated production in the four Alaska OCS program areas range from negligible to \$1.1 billion in the Base Case and from \$220 million to \$10 billion in the High Case, the net economic value (NEV) for all but the Beaufort Sea is very low at the *most likely* (Base Case) price of \$18 per barrel of oil. In addition the high costs of infrastructure development and operations have contributed to the lack of commercial success in the Alaska OCS Region. The industry's future interest in any lease sales off Alaska will be strongly influenced by

price expectations and the results of recent exploration. Given the small number of existing leases (all in the Beaufort Sea Planning Area) and other factors, such results might not be available in time to affect planning from one lease sale to the next if sufficient time is not deliberately provided between sales. Considering the nature of the resource estimates for the Alaska Region, it would be reasonable to schedule the Beaufort Sea and the Chukchi Sea areas for leasing at least once in the new 5-year program. Although they have lower NEV's, the Gulf of Alaska and Cook Inlet/Shelikof Strait also should be considered for leasing, absent special environmental or social concerns, if industry interest warrants.

Table 5. Estimated Economically Recoverable Hydrocarbon Resources Available as of July 1997

Areas in the Program Proposal	Oil (BBO)	Gas (Tcf)
Western Gulf of Mexico—map 10	1.47 1.83	19.46 24.56
Central Gulf of Mexico—map 10	1.69 2.29	24.17 31.81
Eastern Gulf of Mexico—map 11	0.04 0.08	0.66 1.04
Beaufort Sea—map 4	0.85 1.70	None
Chukchi Sea/Hope Basin—map 7	1.19 3.00	None
Cook Inlet/Shelikof Strait—map 8	0.12 0.27	0.18 0.40
Gulf of Alaska—map 9	0.05 0.12	None
Alternative Areas	Oil (BBO)	Gas (Tcf)
Eastern Gulf of Mexico—map 12	0.04 0.09	0.74 1.19
Eastern Gulf of Mexico—map 14	0.01 0.03	0.27 0.53
Eastern Gulf of Mexico—map 15	0.01 0.04	0.35 0.68
Mid-Atlantic—map 16	0.00 0.01	0.35 0.54

Base Case estimates (\$18 per bbl and \$2.11 per Mcf) are shown first, with High Case estimates (\$30 per bbl and \$3.52 per Mcf) underneath.

The areas in the program proposal are described and considered under Option 1 in this decision document and Alternative 1 in the final EIS. The alternative areas are described and considered under the options cited in corresponding maps and under Alternatives 4 and 5 in the final EIS. See part III.A for maps and descriptions of the program options and EIS alternatives.

Available Undiscovered, Economically Recoverable Resources *

x Assumed Price

= Gross Revenue

Gross Revenue

- Private Costs

= Net Economic Value (NEV)

NEV

- Environmental and Social Costs

= Net Social Value (Net Supply-Side Benefits)

Net Social Value

+ Consumer Surplus Benefits (Net Demand-Side Benefits)

= Net Microeconomic Benefits

Figure 2. Components of the Net Benefits Analysis

*The estimates for the relative ranking analysis are based on all resources anticipated to be available for leasing in each program area as of July 1997. The estimates for the valuation of program alternatives are based solely on anticipated production under each EIS alternative.

An area with a low or negligible estimated net economic value should not be removed automatically from consideration for leasing. Other factors, including industry interest, unpredicted changes in costs or resource prices, the ability of individually *uneconomic* discoveries to jointly support infrastructure development costs, and future technological innovation, also need to be examined.

Companies can have different assessments of the resource potential of various areas, especially frontier areas (where any additional exploration could add significantly to a limited base of information). When deciding whether to commit investment dollars to explore unproven areas, companies are going to consider the possibility that an area contains much greater resources than indicated by the mean estimate. For example, any companies interested in the Chukchi Sea/Hope Basin area are not looking at the risked NEV shown here but at the tremendous resource potential that could be tapped if conditions are right, as implied by the conventionally recoverable resource estimates in table 2-1 in appendix 2. Also, while the MMS estimates the Cook Inlet/Shelikof Strait program area to have a low NEV, companies have expressed significant interest in the area, and the State of Alaska is planning lease sales for adjacent State lands and waters.

Similarly, if warranted by industry interest, other areas that the MMS estimates to have negligible NEV could be combined for leasing with contiguous areas of significant value. This would allow companies to pursue exploration strategies that assume the areas of higher resource potential might extend farther than the MMS estimates indicate, and it could result in valuable information concerning resource

potential. Also, the infrastructure developed to support production and transportation of resources in one area could make

Table 6. Summary of Estimated Net Benefits of Producing Available Program Area Resources

Areas in the Program Proposal	Net Economic Value	Environmental and Social Costs	Net Social Value	Consumer Surplus Benefits	Net Microeconomic Benefits
Western Gulf of Mexico	\$12,800.0 \$28,040.0	(\$0.8) (\$1.3)	\$12,799.2 \$28,038.7	\$1,647.0 \$3,344.0	\$14,446.2 \$31,382.7
Central Gulf of Mexico	\$14,590.0 \$33,850.0	(\$38.3) (\$62.2)	\$14,551.7 \$33,787.8	\$1,961.0 \$4,246.0	\$16,512.7 \$38,033.8
Eastern Gulf of Mexico	\$230.0 \$760.0	(\$5.5) (\$11.1)	\$224.5 \$748.9	\$28.0 \$81.0	\$252.5 \$829.9
Beaufort Sea	\$2,880.0 \$15,880.0	(\$28.9) (\$38.7)	\$2,851.1 \$15,841.3	\$1,582.0 \$3,781.0	\$4,433.1 \$19,622.3
Chukchi Sea/Hope Basin	\$750.0 \$10,060.0	(\$16.4) (\$40.8)	\$733.6 \$10,019.2	\$648.0 \$2,700.0	\$1,381.6 \$12,719.2
Cook Inlet/ Shelikof Strait	\$520.0 \$2,500.0	(\$1.2) (\$3.0)	\$518.8 \$2,497.0	\$165.0 \$472.0	\$683.8 \$2,969.0
Gulf of Alaska	* \$570.0	* (\$20.1)	* \$549.9	* \$160.0	* \$709.9
Alternative Areas					
Eastern Gulf of Mexico—map 12	\$250.0 \$900.0	(\$5.5) (\$13.1)	\$244.5 \$886.9	\$30.0 \$92.0	\$274.5 \$978.9
Eastern Gulf of Mexico—map 14	\$20.0 \$280.0	\$2.6 \$4.1	\$17.4 \$275.9	\$10.0 \$37.0	\$27.4 \$312.9
Eastern Gulf of Mexico—map 15	\$40.0 \$420.0	\$2.6 \$6.1	\$37.4 \$413.9	\$12.0 \$48.0	\$49.4 \$461.9
Mid-Atlantic—map 16	* *	* *	* *	* *	* *

All figures in the table are in millions of 1997 dollars. Base Case estimates (\$18 per bbl and \$2.11 per Mcf) are shown first, with High Case estimates (\$30 per bbl and \$3.52 per Mcf) underneath.

The areas in the program proposal are described and considered under Option 1 in this decision document and Alternative 1 in the final EIS. The alternative areas are described and considered under the options cited in corresponding maps and under Alternatives 4 and 5 in the EIS. See part III.A for maps and descriptions of the program options and EIS alternatives.

*Net economic value is considered negligible. Assuming no exploration or other activity, social costs would not be incurred, and there would be no net social value or consumer surplus benefits.

profitable the development of *uneconomic* discoveries in nearby areas. This is part of the rationale for including a portion of the Hope Basin in a joint sale with the higher value Chukchi Sea area, as well as for the inclusion of the area east of Barter Island in the Beaufort Sea, even though it is assumed to have only subeconomic resources. A joint lease sale for the Chukchi Sea and Hope Basin was considered in the 5-year program for 1992-1997 and subsequently, for a possible simultaneous U.S./Russian Federation lease sale in the Chukchi Sea.

Although geologic and economic factors might suggest scheduling sales in other planning areas located in the Pacific and Atlantic OCS regions, experience indicates that additional considerations must be assessed, such as the level of industry interest and noneconomic factors. Due to executive and congressional restrictions, local concerns, and continuing MMS discussion with local interested parties, it might not be appropriate to consider a number of areas (or portions of them) for leasing in the 5-year program for 1997-2002. Other factors—such as State and local concerns and the potential losses in resource economic values due to extensive delays and uncertainties in obtaining Federal, State, and local government approval for exploration, development, production, and transportation activities that could result—must be considered in addition to information concerning the amounts and values of prospective hydrocarbon resources. Delays and uncertainties have been found to dramatically increase the economic risk to lessees, thereby reducing the potential value of leases in areas that are subject to such conditions, making many of them unattractive to industry even though the underlying economic potential is significant.

If a leasing schedule is based on low resource price assumptions and pessimistic exploration expectations, the resulting schedule may preclude important discoveries in high-risk areas and may prove to be too restrictive if resource prices rise or other conditions change. Thus, there is a strong rationale for using expected or even optimistic economic and geologic assumptions in formulating a 5-year leasing schedule.

Environmental Sensitivity and Marine Productivity

Background

Section 18(a)(2)(G) requires that the environmental sensitivity and marine productivity of the different OCS areas be considered. The analysis of this factor for the Proposed Final Program follows the approach taken for previous 5-year programs. This analysis incorporates by reference the analysis done for the 5-year program for 1992-1997, the methodology and results of which were presented in appendix 11 of the April 1992 SID.

Marine productivity is the amount of plant or animal biomass produced in an area over a 1-year period. Estimating primary production (creation of plant material through photosynthesis) is considered to be the only valid approach to conducting a meaningful comparison of marine productivity among all OCS planning areas. While secondary productivity factors relating to endangered or valued species (e.g., coral communities), unique socioeconomic factors (e.g., subsistence hunting), and commercial fisheries are important considerations in the formulation of a leasing program, such factors are not included in this analysis of environmental sensitivity/marine productivity. This is because despite the considerable historical information available for OCS waters, the

nature and distribution of the data limit the ability to directly compare geographic regions of the OCS and derive relative values for all planning areas.

Although it might be desirable to include in this analysis a thorough consideration of higher level productivity as requested by the NOAA—which recommended that the analysis include landing and dollar values for commercial fisheries in the Central and Western Gulf of Mexico Planning Areas—and other commenters, the best available data on marine productivity are not consistent across OCS planning areas and in many cases are inadequate for such comparisons. Thus, secondary productivity factors receive thorough consideration and analysis in the context of other section 18 criteria, in the programmatic EIS, and later on in sale-specific EIS's. See chapter III of the final EIS for region-by-region discussions relating to higher level productivity.

Relative environmental sensitivity is calculated as a measure of the sensitivity of various coastal and marine habitats and biota to spilled crude oil. Unlike some assessments in the programmatic and sale-specific EIS's designed to estimate potential risks from proposed oil and gas leasing activities, these analyses do not consider risk, nor do the rankings for environmental sensitivity reflect potential risk. Analysis of the effects of oil and gas activities on higher level species is left to programmatic, sale-specific, and site-specific reviews conducted pursuant to NEPA. The programmatic final EIS accompanying this Proposed Final Program decision document describes the biological environments of the OCS regions in chapter III and discusses the potential environmental consequences of OCS program activities in chapter IV.

Productivity and Sensitivity Estimates

This Proposed Final Program decision document focuses on 9 of the total of 26 OCS planning areas. These 9 planning areas are being analyzed further. Table 7 estimates the total primary production for those areas, and table 8 lists annual averages per hectare. The numbers provide a scale to help determine if local areas of interest exhibit exceptional productivity relative to the average rate for the entire area.

The MMS also has reviewed new information on productivity and effects of crude oil available since 1990. New data from recent oil spills have confirmed relative sensitivities of biota and habitats as used in the sensitivity analysis (Davis et al., 1995; Exxon Valdez Oil Spill Trustee Council, 1993; Gerges, 1993; Khordagui and Al-Ajmi, 1993; Maki, 1991). However, delays in launching a satellite have resulted in no new satellite data for ocean color (primary production estimates) being available from 1990 to the present.

The concept of defining overall environmental sensitivity of different geographic regions is even more complex than that of comparatively analyzing overall marine productivity. For environmental sensitivity, defining what in the environment is of concern and then further determining a measure of sensitivity to numerous potential impacts result in an extremely complex analysis. To establish some type of comparative index, the MMS analysis has focused on potentially the most catastrophic phenomenon from offshore oil and gas development, spilled crude oil. Scientific studies have provided much information to establish a good sense of relative sensitivity of habitats and broad groups of marine biota to spilled crude oil.

As in the April 1992 SID, the results of the environmental sensitivity analysis are presented as the distributions and relative environmental sensitivities of three components of each OCS planning area: (1) coastal habitat; (2) marine habitat; and (3) marine biota. Because relatively small differences in total scores are not meaningful, planning areas have been placed in three groups with Group 1 representing those planning areas that have the highest relative sensitivity and Group 3 representing those planning areas with the least relative sensitivity. The final environmental sensitivity calculations for each major component are used to designate under which of three relative categories of sensitivity (1, 2, or 3) each of the planning areas is ranked for that specific component. Table 9 contains the final groupings by each individual component for the nine planning areas under analysis. The planning areas for each of the component categories have been placed in a division that indicates their relative standing: Group 1—greatest relative sensitivity; Group 2—moderate relative sensitivity; and Group 3—lowest relative sensitivity. In the marine habitat and coastal habitat components there is also a fourth group—not ranked—for those planning areas that lack coastal habitat or have mostly unknown marine habitats.

As in the 1992 analysis of environmental sensitivity and marine productivity, the current analysis examines whole OCS planning areas, not the more defined program areas that have been identified for leasing consideration, because the MMS does not have the capability to generate new estimates for those smaller program areas. There is virtually no difference between the Central and Western Gulf of Mexico Planning Areas and the program areas identified for each. The Mid-Atlantic, Eastern Gulf, and all five Alaska program areas are much smaller portions of their respective planning areas. Although the selection of different portions of planning areas would have an overall effect on the potential risks that may result from proposed OCS oil and gas activities in each of those areas, there would be no change to the overall sensitivity and productivity of the planning areas to OCS activities. This is because the areas excluded from the planning areas will still be at risk to the activities in the included (program) areas, and because marine productivity is an expression of the amount of biomass produced per unit area regardless of the overall size of the area analyzed.

Table 7. Total Primary Productivity Estimates (Millions of metric tons of carbon per year)

Planning Area	Productivity
Group 1	
none being considered	
Group 2	
Mid-Atlantic	140
Eastern Gulf of Mexico	117
Central Gulf of Mexico	110
Gulf of Alaska	106
Group 3	
Hope Basin	39
Western Gulf of Mexico	31
Cook Inlet/Shelikof Strait	24
Chukchi Sea	8
Beaufort Sea	5

Table 8. Average Primary Productivity Estimates (Metric tons of carbon per hectare per year)

Planning Area	Productivity
Group 1	
Cook Inlet/Shelikof Strait	7
Hope Basin	7
Group 2	
Central Gulf of Mexico	6
Mid-Atlantic	4
Eastern Gulf of Mexico	4
Western Gulf of Mexico	2
Gulf of Alaska	2
Group 3	
Chukchi Sea	1
Beaufort Sea	*

*Less than 0.5

Equitable Sharing of Developmental Benefits and Environmental Risks

Section 18(a)(2)(B) requires that the Secretary consider an equitable sharing of developmental benefits and environmental risks. Because developmental benefits and many environmental risks tend to accrue outside the OCS regions, which are portions of land lying under the ocean, analysis of this factor usually goes beyond the strict requirements of the OCS Lands Act and considers the sharing of benefits and risks to people within onshore regions near the OCS.

Section 18 does not require that the leasing program achieve an equitable sharing of developmental benefits and environmental risks, nor have the courts set a specific standard of equitable sharing that the Secretary is to achieve. As the court recognized in *California I* and *California II*, the degree to which a proposed 5-year schedule of lease sales might achieve an equitable sharing of benefits and risks must be considered in light of a number of other factors, many of which are not under the control of the Department of the Interior and some of which greatly affect the options available.

The important issues to consider, as well as the anticipated distribution of benefits and risks implied by the various options, have not changed significantly since the analysis for the Proposed Program was completed. The decision document for the Proposed Program should be consulted for more detail on any of the topics in this section.

Table 9. Relative Environmental Sensitivity (Groups show relative environmental sensitivity in descending order)

Coastal Habitats	Marine Habitats	Marine Biota
Group 1		
Central Gulf of Mexico	Cook Inlet	Central Gulf of Mexico
Gulf of Alaska		Western Gulf of Mexico
Western Gulf of Mexico		Mid-Atlantic
Group 2		
Eastern Gulf of Mexico	Gulf of Alaska	Gulf of Alaska
Cook Inlet/Shelikof Strait	Eastern Gulf of Mexico	Cook Inlet
	Beaufort Sea	Eastern Gulf of Mexico
	Western Gulf of Mexico	Beaufort Sea
	Central Gulf of Mexico	
Group 3		
Chukchi Sea	Mid-Atlantic	Hope Basin
Hope Basin		Chukchi Sea
Mid-Atlantic		
Beaufort Sea		
Not Ranked		
	Chukchi Sea	
	Hope Basin	

Comments

The Governor of Alabama, the Alabama Department of Conservation and Natural Resources, and the West Florida Regional Planning Council expressed support for a sharing of the financial benefits of OCS development and production with coastal States and communities affected by those activities. Dauphin Island Sea Lab stated its hope that Alabama would receive the impact revenues for any resources produced off Florida but transported to and processed in Alabama, given its expectation that related onshore development would cause more impacts than would the offshore activities themselves. CalResources also advocated the sharing of Federal royalty revenues with State, county, and municipal governments affected by OCS activities. The Bering Straits Coastal Management Program requested creation of a fund to compensate or replace food resources lost to subsistence users without having to go to court to prove damages. The Connecticut Department of Environmental Protection supported the sharing of OCS revenues with affected States and proposed that the MMS use existing authority to evaluate revenue sharing opportunities, using proposed bill S.575 and communication

with States and local governments as guides in determining how best to structure the sharing. In the past Connecticut has asked that planning and evaluation costs be included among the impacts considered in any revenue sharing proposal. Other respondents, including some in industry, have implied continued support for impact assistance and revenue sharing as expressed in the previous comments. In addition at a public meeting held in Alaska following issuance of the Proposed Program and draft EIS, the Mayor of Kaktovik and the Arctic Slope Native Association commented in favor of impact assistance for communities affected by offshore development.

Analysis of Regional Distribution of Developmental Benefits and Environmental Risks

Some benefits and risks to onshore residents and the State and local governments that represent them are distributed widely, while others tend to be concentrated in the areas near OCS activities. The expected effects of oil and gas activities—both benefits and costs—will depend on a number of factors, including local, national, and international economic conditions, the extent to which a local support industry exists, the level of OCS activities already taking place, and the nature of the proposal.

Benefits that Tend to Be Concentrated in the Regions of Greatest Risk. The benefits of OCS oil and gas activities that accrue primarily to oil and gas producing regions and nearby onshore areas are derived from reduced risk of tanker spills and from the direct, indirect, and induced effects of industry spending. (These benefits are summarized on pages 99-102 of the Proposed Program decision document.) Although it primarily addresses potential negative effects of the program proposal and alternatives, the programmatic final EIS also contains further information on likely employment benefits.

Because almost any combination of program options under consideration for the 5-year program for 1997-2002 would result in a majority of sales being scheduled for the Gulf of Mexico, States in that region are expected to gain the largest share of employment benefits associated with the program. As noted in the previous analysis, the potential for changes appears to be greatest in Alaska, which has an established onshore oil industry but where activity on the OCS has been limited to exploration efforts. Because there are no Atlantic OCS sales on the proposed schedule, no employment and income effects are expected to result in the Atlantic region, although a limited lease sale in the Mid-Atlantic as analyzed under Alternative 5 of the programmatic EIS could result in small benefits to coastal residents associated with exploration, development, and eventual production.

As shown in the analysis of energy needs in part IV.A of this document, oil and gas produced from the OCS result in lower levels of imported oil and reductions in use of energy from other sources. This lowers the risk of oil spill damage from supertankers bringing oil to the United States, and the risk is lowered for areas with and without nearby OCS production.

Federal, State, and local policies provide various means for distributing OCS-related benefits. Although benefits flowing from Federal Government revenues obtained through OCS oil and gas activity are distributed widely among the States, they also accrue to onshore populations near that OCS activity. Since passage of the OCS Lands Act Amendments of 1985 (P.L. 99-272), over \$2.3 billion in revenues has been

distributed to seven coastal States having Federal oil and gas leases adjacent to State waters as defined in section 8(g) of the Act (Louisiana, Texas, Alabama, Mississippi, Florida, California, and Alaska). In addition States and localities capture some of the developmental benefits through taxes and user fees.

Benefits that Tend to Be Widely Distributed. Previous 5-year program analyses of equitable sharing have shown that some of the benefits of the OCS program (Federal revenues from lessees' cash bonus payments, rentals, royalties, income taxes, and other sources) are widely distributed through the Federal tax system. This conclusion held whether the sharing was considered to be through reduction in Federal tax payments, through Federal funds provided to State and local governments, or through Federal programs benefiting the general public. In addition hundreds of millions of dollars in OCS revenues are transferred annually to the Land and Water Conservation Fund, which is used to buy park and recreation land and to assist States in parks and recreation planning and acquisition, and to the National Historic Preservation Fund for use by State and local governments in preserving historic properties. The OCS program also generates national benefits in forms other than Federal revenues. One form is corporate profits and benefits, which tend to be distributed to shareholders and employees on a national basis, similar to the sharing of Federal revenues. Despite the concentration of most factor-of-production spending in areas nearest OCS operations, millions of contract dollars also are spent in other States.

Risks that Tend to Be Concentrated in the Regions of Production. Exploration, development, production, and transportation activities do not occur without some risk to the physical, biological, and socioeconomic environment. Environmental costs are incurred in and near the areas in which oil and gas are produced, as well as along the routes from production sites to refineries. Socioeconomic costs are incurred in populated coastal areas near production and transportation of hydrocarbon resources. In addition the onshore populations in areas with local economies heavily dependent on OCS oil and gas activities are vulnerable to problems associated with sharp changes in resource prices.

A thorough description of potential environmental risks posed by each of the five basic alternative program schedules is presented in the programmatic final EIS, and summaries are provided in the discussions of program options for OCS regions in part III of this decision document. As explained in appendix 2, those environmental risks described in the programmatic EIS that can be reasonably quantified are included in the environmental and social cost estimates.

The environmental and social cost calculations in the social benefits analysis allocate costs to the area where production of the resource is assumed to occur (see table 10). The MMS has reallocated the environmental and social cost data to reflect *regional costs*, which are obtained by allocating oil-spill costs to the planning areas in which (or nearest which) they are expected to occur, then subtracting those costs that would otherwise be incurred because of additional oil imports. Regional cost calculations attribute costs to the *expected* site of an oil spill and do not account for the fact that the financial costs, including cleanup and compensation for injury to resources and property, would be borne more widely by company stockholders and (perhaps) employees, whether or not a responsible party can be determined.

If an increase in OCS oil and gas activities causes a large change in the local economy, it brings some risk as well. These risks are primarily of two kinds, the strain on local infrastructure and the local socioeconomic fabric and the increased vulnerability of the local economy to sudden, sharp changes in oil and gas prices. These risks are greatest in Alaska, which has no OCS-related infrastructure (in contrast with the Gulf of Mexico Region) and where commercial discoveries could lead to a proportionately large influx of new residents (unlike the Mid-Atlantic area). However, OCS production off Alaska could help to alleviate some social problems caused by unemployment and underemployment in Alaska, provide additional time and money to develop a more diversified State economy, and (for Beaufort Sea production) preserve jobs by extending the life of the Trans Alaska Pipeline.

Widely Distributed Compensation Costs for Risks Borne Regionally. When innocent parties or natural resources are injured by an event that can be attributed to a financially responsible party, the responsible party must provide full compensation for the injury. If the responsible party is a corporation with stockholders (and employees) residing in other parts of the country, presumably the costs also would be distributed widely rather than borne locally. Portions of revenue generated by the oil and gas industry are dispensed to special funds established by law to provide compensation for losses in OCS-related cases where responsibility cannot be assigned. The Oil Spill Liability Trust Fund, the Hazardous Substance Response Trust Fund, and the Fishermen's Contingency Fund all can be used to compensate for losses resulting from OCS oil and gas activities. To the extent compensation is paid from these funds, the relevant costs are distributed widely because the owners and stockholders of the companies that contribute to these funds are widely scattered among the States.

Summary

The lease sales scheduled in the Proposed Program and the other options for lease sales explicitly considered in the Proposed Final Program (see part III above and Alternatives 3, 4, and 5 in the EIS) are unlikely to cause or contribute to major socioeconomic problems, such as those associated with a large and sudden influx of new residents, in or near three of the four OCS regions. Major commercial discoveries on the Alaska OCS could lead to important changes in employment and population patterns, but the concentration of new residents in regional enclaves would mitigate some effects of these changes. Any production in the Beaufort Sea or the Chukchi Sea/Hope Basin program areas would introduce the risk of oil spills that could harm natural resources—including marine mammals and other wildlife—in and near the arctic planning areas. Cook Inlet and the Gulf of Alaska also could face increased risk of spills, depending on whether new tanker traffic from Beaufort Sea and Chukchi Sea/Hope Basin production and any local production would increase or merely offset declines in the existing risks related to production and tankering oil.

The natural distribution of oil and gas resources, strong opposition to leasing from onshore residents near some planning areas, and the need to achieve other goals indicate that the Secretary might best interpret *equitable sharing* in the context of the history of OCS activity and the high degree of uncertainty inherent in the long-term implementation of any 5-year schedule. Historically, lease sales have been held in all four OCS regions, and efforts continue to work with nearby onshore communities "to balance orderly energy resource development with protection of the human, marine, and coastal environments" in the four regions. This cooperation has helped to double

production from the Southern California Planning Area and might lead to eventual production from promising natural gas fields in the Eastern Gulf of Mexico. The Secretary should also bear in mind that although there are prospective portions of all four OCS regions, considering the overall history of the program—especially the legislative constraints that have affected implementation of previous 5-year programs—a more aggressive schedule would not necessarily result in more lease sales or more production than would a more restrained schedule. Focusing on being a good neighbor, proceeding deliberately with environmental concerns extensively studied and analyzed, and pursuing consensus building efforts could result in a 5-year schedule under which most lease sales are held on time and future OCS production is maximized.

Table 10. Regional Environmental and Social Costs for the Program Proposal and EIS Alternatives

Planning Areas	Gross OCS Costs	Avoided Costs of Oil Imports	Net OCS Costs
Alternative 1			
Western Gulf of Mexico	\$1.2 \$2.7	\$0.6 \$1.3	\$0.6 \$1.4
Central Gulf of Mexico	\$21.6 \$46.8	\$4.1 \$10.6	\$17.5 \$36.2
Eastern Gulf of Mexico	\$4.9 \$8.0	\$0.7 \$0.1	\$4.2 \$7.9
Beaufort Sea	\$2.3 \$9.1	\$0.0 \$0.0	\$2.3 \$9.1
Chukchi Sea/Hope Basin	\$1.3 \$10.8	\$0.0 \$0.0	\$1.3 \$10.8
Cook Inlet	\$0.4 \$2.4	\$0.3 \$1.8	\$0.1 \$0.6
Gulf of Alaska	\$0.0 \$5.0	\$0.0 \$0.0	\$0.0 \$5.0
Washington/Oregon	\$0.5 \$2.5	\$0.44 \$2.2	\$0.1 \$0.3
Central California	\$0.8 \$4.2	\$0.7 \$3.7	\$0.1 \$0.5
Southern California	\$0.7 \$3.6	\$0.62 \$3.2	\$0.1 \$0.4

Table 10. Regional Environmental and Social Costs for the Program Proposal and EIS Alternatives (continued)

Alternative 3			
Western Gulf of Mexico	\$0.8 \$1.7	\$0.4 \$0.8	\$0.4 \$0.9
Central Gulf of Mexico	\$13.2 \$27.0	\$2.9 \$6.8	\$10.3 \$20.2
Beaufort Sea	\$1.5 \$5.4	\$0.0 \$0.0	\$1.5 \$5.4
Cook Inlet	\$0.4 \$2.3	\$0.3 \$1.8	\$0.1 \$0.5
Gulf of Alaska	\$0.0 \$5.0	\$0.0 \$0.0	\$0.0 \$5.0
Washington/Oregon	\$0.4 \$2.1	\$0.3 \$1.9	\$0.1 \$0.2
Central California	\$0.6 \$3.5	\$0.5 \$3.1	\$0.1 \$0.4
Southern California	\$0.5 \$3.0	\$0.4 \$2.6	\$0.1 \$0.4
Alternative 4B			
Eastern Gulf of Mexico	\$3.0 \$5.0	\$0.4 \$1.1	\$2.6 \$3.9
Alternative 5A			
Central Gulf of Mexico	\$21.6 \$46.8	\$4.1 \$10.6	\$17.5 \$36.2
Eastern Gulf of Mexico (1 sale)	\$5.8 \$8.1	\$0.6 \$1.3	\$5.2 \$6.8
Mid-Atlantic (5A&5B)	\$0.0 \$0.0	\$0.0 \$0.0	\$0.0 \$0.0
Alternative 5B			
Central Gulf of Mexico	\$21.6 \$46.8	\$4.1 \$11.1	\$17.5 \$35.7
Eastern Gulf of Mexico (2 sales)	\$7.1 \$9.6	\$0.7 \$1.5	\$6.4 \$8.1

All figures in the table are in millions of 1997 dollars. Top figure in each box is the Base Case estimate, with the High Case estimate shown below. All regional and social costs are computed relative to Alternative 2 (No Action), so it would show no regional costs and is not included in the table. In Alternative 4B, the program area would begin 15 miles from shore. Alternative 5A includes one sale in the Eastern Gulf of Mexico; 5B includes an additional sale for deep-water blocks only.

In some areas where there has been opposition to past leasing programs, there is now a

potential for building consensus on more limited and carefully designed leasing proposals. Efforts to build trust and develop a common base of understanding and knowledge need to proceed deliberately and carefully and are likely to take time. Scheduling sales in planning areas adjacent to States and counties that recently have begun to modify their long-standing opposition to leasing (but that do not yet fully and unconditionally support the leasing proposals that have been under consideration) could be viewed by those jurisdictions as premature and unilateral decisions on the part of the MMS, reminiscent of past actions that raised their suspicion and opposition. Such actions by the MMS would be expected to damage what mutual trust recently has been established and could result in continued support for Congressional leasing moratoria in the affected areas and could even slow or prevent exploration and development on existing leases. Thus, the prospects for a broad distribution of developmental benefits from future OCS leasing and production in some areas over the longer run (i.e., the approximately 40-year period that would be affected by the new program as analyzed in the EIS) actually might be greater if some areas are deferred from new leasing in the shorter term by not including them in the 5-year leasing schedule for 1997-2002.

A 5-year schedule defined by the options for leasing under consideration for the Proposed Final Program could be viewed as providing for an equitable sharing of developmental benefits and environmental risks, because those regions and onshore areas facing the most risk also receive the greatest benefits. The Proposed Final Program options reflect a focus on building consensus and considering the laws, goals, and policies of affected States, which will enable the Secretary to develop a program with the least controversy while still meeting the energy concerns expressed by section 18, thereby resulting in the best equitable sharing currently practical. In addition there are measures independent of the 5-year program decision that can be taken to reduce risk to the areas included in the schedule: many leases now include stipulations to avoid some anticipated environmental risks and Congress can enact legislation to provide for some form of coastal impact assistance if it believes that States and localities need further compensation for risks imposed by nearby OCS activity.

Other Uses of the OCS

Section 18(a)(2)(C) requires the Secretary to examine the location of areas considered for leasing with respect to other uses of the resources and space within those areas. Other uses of the OCS that could affect or be affected by oil and gas leasing and ensuing activities are described below. The following types of uses are addressed:

- Subsistence (hunting and fishing activities by Alaska Natives);
- Commercial Fishing;
- Tourism and Recreation;
- Vessel Traffic;
- Areas of Special Concern (onshore and offshore areas designated for special uses and protections, such as parks and sanctuaries);
- Military and NASA (operating areas in the Gulf of Mexico and Atlantic Regions);
and

- Nonenergy Marine Minerals.

The information presented below summarizes the detailed regional descriptions of the environment that are included in chapter III of the programmatic final EIS.

Alaska Region

Subsistence. As defined by the Alaska National Interest Lands Conservation Act, subsistence uses are "the customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption . . ."

Subsistence activities in the Beaufort Sea marine and coastal area involve the bowhead whale as well as other species including caribou, freshwater and ocean fish, ducks and geese, bearded seals, and Dall sheep. Species subject to subsistence activities in the Chukchi Sea area include bowhead whale, beluga whale, caribou, seal, walrus, polar bear, fish, duck, and goose. Bowhead whaling is the single most valued activity in the North Slope subsistence economy today. In the vicinity of the Hope Basin area subsistence activities are oriented toward sea mammals, including the bowhead whale, and other subsistence resources include caribou, migratory birds, eggs, berries, and other vegetation. Widely varying subsistence patterns in the vicinity of Cook Inlet reflect the area's diverse population. Generally, the inhabitants of small traditional villages harvest saltwater and freshwater fish and small sea mammals in the summer and fall, moose in the fall, and invertebrates and some sea mammals year round. In the larger, industrial communities, the people generally fish in the summer and hunt in the fall, and more households do not partake in subsistence activities. The pattern of activity in the Gulf of Alaska area primarily involves saltwater and freshwater fishing, sea mammal hunting (but not whaling), and upland game hunting.

Commercial Fishing. In the Beaufort Sea area there is one family operating a commercial fishery focused primarily on cisco and whitefish in the Colville River Delta during summer and fall. Except for a small chum salmon fishery in Kotzebue Sound, there are currently no commercial fisheries in the vicinity of the Chukchi Sea/Hope Basin program area. Commercial fishing is an important segment of the local economy of the Cook Inlet region, focusing mainly on salmon and to a lesser degree on crab, shrimp, and halibut. In the vicinity of the Gulf of Alaska area being considered for OCS leasing the city of Yakutat depends heavily on fishing and fish processing, with operations concentrating mainly on salmon and also on halibut and crab.

Tourism and Recreation. In the Beaufort Sea and Chukchi Sea/Hope Basin areas, most recreation activities take place in the summer and include fishing, boating, hunting, hiking, sightseeing, camping, and picnicking. Organized tours are conducted in the Beaufort Sea area, but few outside visitors travel to the Chukchi Sea/Hope Basin areas. The Cook Inlet and Gulf of Alaska areas offer abundant high quality tourist and recreation resources that attract numerous State, national, and international visitors. Additional information relating to tourism and recreation in Alaska is available in the final EIS description of areas of special concern.

Vessel Traffic. Marine traffic in the arctic waters of Beaufort Sea and Chukchi Sea/Hope Basin is limited to a 60-90-day open-water season. There are no major arctic ports and the most extensive marine facilities are those associated with the Prudhoe Bay industrial complex. In southern Alaska tour ships, barges, and ferries travel inland and among the islands, and freighters bound for Asia stay farther offshore through the Gulf

of Alaska. Oil tankers travel between the west coast of the continental United States and the Alyeska terminal at Valdez through Prince William Sound in separate traffic lanes prescribed by the U.S. Coast Guard and through the Gulf of Alaska. Approximately 1,000 such trips from the Alyeska oil terminal in Valdez are made per year. Tankers carrying oil from Valdez into the Cook Inlet region for processing take another route through Prince William Sound that does not include the prescribed Coast Guard lanes. Also, tankers that export oil from Valdez to Asia are not expected to travel within those lanes.

Areas of Special Concern. All four of the program areas off Alaska are adjacent to coastal portions of National Park System units. The Beaufort Sea area is adjacent to the Arctic National Wildlife Refuge. The Hope Basin portion of the Chukchi Sea/Hope Basin program area is located off Cape Krusenstern National Monument. The Cook Inlet area is near Lake Clark National Park and Preserve and the Katmai National Park and Preserve. The Gulf of Alaska area is adjacent to Chugach National Forest, Tongass National Forest, and Glacier Bay National Park and Preserve. All of these units are described in the final EIS.

Nonenergy Marine Minerals. There is no current development of offshore nonenergy minerals in any of the Alaska program areas under consideration for leasing. There are sand and gravel deposits in the Beaufort Sea, but their value as a construction material is not well known.

Gulf of Mexico Region

Commercial Fishing. The commercial fishing industry is one of the most important in the United States in both tonnage and value. Menhaden is the most important finfish harvested, followed by nine other species of significant value. Shrimp is the most important shellfish, along with various oyster, lobster, and crab species. Louisiana ranked first among Gulf States in total commercial fisheries landed in 1993, followed in descending order by Texas, Florida (west coast), Alabama, and Mississippi.

The commercial fishing industry in the Gulf has grown markedly over the last decade, especially in Louisiana. One factor contributing to this growth has been a decline in economic activities and employment associated with the oil and gas sector.

Tourism and Recreation. The northern Gulf of Mexico coastal zone is one of the major recreational regions of the United States, particularly in connection with marine fishing and beach-related activities. The shorefronts along the Gulf States offer a diversity of natural and developed landscapes and seascapes. The coastal beaches, barrier islands, estuarine bays and sounds, river deltas, and tidal marshes are extensively and intensively used for recreational activity by residents of the Gulf States and tourists from throughout the Nation, as well as from foreign countries. Publicly owned and administered areas, such as national seashores, parks, beaches, and wildlife lands, as well as specially designated preservation areas, such as historic and natural sites and landmarks, wilderness areas, wildlife sanctuaries, and scenic rivers, attract residents and visitors throughout the year. Commercial and private recreational facilities and establishments, such as resorts, marinas, amusement parks, and ornamental gardens, also serve as primary interest areas and support services for people who seek enjoyment from the recreational resources associated with the Gulf of Mexico.

Tourism is a prominent industry in all of the Gulf of Mexico States—especially in Texas, where it is second only to the oil and chemical industry. Coastal resources such as beaches, marine resources such as sport fisheries, and developed coastal tourism infrastructure contribute significantly to Gulf State tourism economy. Oil and gas structures located off Louisiana and Texas in areas accessible to recreational divers and fishermen have been a significant attraction and have had a positive influence on the related economy.

Additional information relating to tourism and recreation in the Gulf of Mexico is available in the programmatic final EIS description of areas of special concern.

Vessel Traffic. An extensive shipping pattern has developed among the major Gulf of Mexico ports and between the ports and destinations outside the northern Gulf via the Straits of Florida, the Yucatan Channel, and the Bay of Campeche. In 1993 there were over 550,000 vessel trips measured along waterways associated with the major ports located in Texas, Louisiana, Mississippi, Alabama, and Florida (see chapter III of the programmatic final EIS for a list of the major port cities). The Ports of New Orleans and Houston are two of the largest ports serving the United States. Marine traffic in and along the Gulf of Mexico has fluctuated from year to year but, with the exception of activity related to petroleum, has not increased significantly since 1980. The U.S. Coast Guard has designated vessel fairways throughout the Gulf, including lanes running parallel to the shore that are located relatively close to Texas, Mississippi, and Alabama and farther off Louisiana.

There is also a substantial amount of domestic waterborne commerce along the Gulf coast that does not always use open Gulf waters. Vessels engaged in this activity generally use the Gulf Intracoastal Waterway, which follows the coastline inshore and through bays and estuaries and in some cases may move offshore. The Gulf Intracoastal Waterway reaches from Fort Myers, Florida, to Brownsville, Texas.

The most significant contribution of marine transportation to vessel traffic in the Gulf is from the tankering of imported crude oil. Extensive refinery capacity, easy port access, and a well-developed onshore-transportation system have contributed to the development of the Gulf coast region as an important center for handling imported oil and production from other domestic sources such as Alaska and California. Recently, the U.S. Coast Guard proposed the designation of three to four lightering areas in the Gulf to replace the nine existing rendezvous points in the Gulf (see January 5, 1995, *Federal Register*, pp. 1958-1971 for area coordinates). The Gulf Region also includes the Nation's Strategic Petroleum Reserve and the only deep-water crude oil terminal in the country, the Louisiana Offshore Oil Port (LOOP).

The Gulf of Mexico receives about 65 percent of all crude oil imported into this country. The great majority of the tankered oil enters the Gulf through the Yucatan Channel, and less used routes include the Straits of Florida and the Bay of Campeche. Large amounts of petroleum products also are imported and exported through the Gulf, and large volumes of both crude oil and petroleum products are transported along the Gulf coast by tanker and barge between land-based terminals and storage facilities at ports.

Areas of Special Concern. Special areas in the Gulf of Mexico include a National Marine Sanctuary, National Park System units, National Wildlife Refuges, a National Estuarine Research Reserve, and National Estuary Program areas. The Flower Garden

Banks National Marine Sanctuary covers an approximately 45-square mile area located 177 miles offshore within the Western Gulf of Mexico Planning Area. National Park System units along the Gulf coast that are adjacent to areas considered for leasing include the Padre Island National Seashore off Texas and the Gulf Islands National Seashore off Mississippi and Alabama. There are 28 National Wildlife Refuges located along the coast from Texas to Alabama. The Weeks Bay National Estuarine Research Reserve encompasses a small estuary in the vicinity of Mobile Bay adjacent to the Central Gulf of Mexico Planning Area. National Estuary Program areas include the Galveston Bay and Corpus Christi Bay systems in Texas and the Barataria-Terrebonne Estuarine Complex and Lake Pontchartrain Basin Program in Louisiana. All of these areas are described in the programmatic final EIS.

Military. The Gulf of Mexico is the most important overwater testing and training area in the United States, with areas designated for air to surface and air to missile testing, surface vessel testing, and training for air, surface, mine, and submarine operations. Areas used by the military include the Corpus Christi Operating Area off Texas (mine warfare and aircraft carrier landing training), the New Orleans Operating Area off Louisiana (naval live firing maneuvers), and the Pensacola Operating Area off Alabama and Florida (aircraft carrier landing training, naval vessel shakedown testing, and live firing exercises). The Department of the Navy has endorsed the Proposed Program.

Nonenergy Marine Minerals. Several minerals in the north-central Gulf of Mexico have the potential to be developed. There are two existing producing sulphur operations on the OCS off Louisiana. Sand resources located in Federal waters in the Ship Shoal area off Louisiana are being considered for use in restoring barrier islands to protect the State's coastal wetlands. Sands in Federal and State waters off Mississippi and Alabama have the potential to be developed for glass production and for coastal restoration uses including beach replenishment.

Atlantic Region

Commercial Fishing. Commercial fishing is an important estuarine and marine activity along the eastern seaboard in the vicinity of the Mid-Atlantic program area. Although landings over the past 20 years have fluctuated annually, the general trend has been a decline in catches since peaking in the early 1980's. Important species of finfish include menhaden and croaker in nearshore waters and swordfish and tilefish farther offshore in the vicinity of submarine canyons. Significant shellfish include oysters, clams, quahogs, scallops, lobster, and blue crabs.

Tourism and Recreation. Tourism is a major industry in many Atlantic coastal counties—including those of New York, New Jersey, Delaware, and Maryland—the States located in the general vicinity of the area of the Mid-Atlantic program area. Some of the more popular beach vacation spots are the State beaches on Long Island in New York, Asbury Park and Atlantic City in New Jersey, the Delaware shore, and Fenwick Island and Ocean City in Maryland. These areas are enjoyed by the local populations and by numerous visitors from inland. Recreation activities include swimming, boating, sightseeing, sport fishing and other pursuits dependent on coastal and marine resources. Additional information relating to tourism and recreation in the Atlantic Region is available in the programmatic final EIS description of areas of special concern.

Vessel Traffic. The major ports in the vicinity of the Mid-Atlantic program area are New York and Philadelphia. Established vessel routing systems that have been sanctioned by the U.S. Coast Guard apply to the area south of Long Island extending to the Carolinas. The Delaware Bay and River port complex leading into Philadelphia is the site of most of the east coast's petroleum refining capacity and is a major transshipment point for petroleum and refined products.

Areas of Special Concern. Special areas in the general vicinity of the Mid-Atlantic program area include National Park Service units, National Wildlife Refuges, and National Estuarine Research Reserves. The Fire Island National Seashore and Gateway National Recreation Area are located on Long Island, and Assateague Island National Seashore extends from Maryland to Virginia. There are six National Wildlife Refuges in coastal New Jersey, five in Maryland, and nine in Virginia. National Estuarine Research Reserves are located in Delaware, Maryland, and Virginia. All of these areas are described in the programmatic final EIS.

Military and NASA. Areas used by the military include: the Narragansett Bay Operating Area, which extends south off Long Island; the Atlantic City Operating Area off New Jersey; the Patuxent River Operating Area off Delaware and Maryland; and the Virginia Capes Operating Area off Virginia. The NASA conducts rocket testing at Wallops Island, Virginia, that entails spent missiles and debris falling into the nearby ocean. The NASA stated that it has no environmental concerns about the Proposed Program but would like another opportunity to comment if the proposal is revised to include areas off the Mid-Atlantic and off California for leasing consideration.

Nonenergy Marine Minerals. Several Mid-Atlantic States and some Federal agencies are pursuing agreements with the MMS for the use of OCS sand resources for public works projects pursuant to October 1994 legislation amending section 8(k) of the OCS Lands Act (43 USC 1337). The OCS sand resources that would be used are located off New Jersey, Delaware, Maryland, and Virginia. There also is interest in commercial leasing and development of OCS sand and gravel off New Jersey for use in construction aggregate (on May 21, 1996, the MMS published in the *Federal Register* a Request for Interest and Nominations identifying 160 tracts for potential leasing consideration). In addition there might be potential for commercially developing placer deposits containing the mineral ilmenite that are located off New Jersey and Virginia.

Industry Interest

Eleven oil and gas companies and two trade associations submitted comments that generally endorsed the Proposed Program lease sale schedule. Industry comments also focused on the Eastern Gulf of Mexico Planning Area, with many asking that more sales and a larger area be considered. Such comments ranged from requests for annual areawide leasing to recommendations for the adoption of Proposed Program Option 3(b). Industry comments also requested that the timing of proposed lease sales in the Beaufort Sea, Cook Inlet/Shelikof Strait, and Gulf of Alaska Planning Areas off Alaska be revised if sales in those areas that are scheduled in the 5-year program for 1992-1997 are delayed significantly or canceled.

As noted in previous decision documents prepared in the development of the 5-year program for 1997-2002, all of the areas that have been proposed for leasing are located adjacent or relatively close to State onshore and offshore areas where there is industry

interest, existing infrastructure, or ongoing exploration and development activity. In a recent development concerning the Gulf of Alaska, one company is in the process of submitting an application to the State of Alaska that could involve directional drilling from land into State waters in that area.

All industry comments are summarized in appendix 1, and the key comments relating to specific areas under consideration for leasing are also cited in the discussions of options in part III.

Balancing Considerations

Section 18(a)(3) requires that:

The Secretary shall select the timing and location of leasing, to the maximum extent practicable, so as to obtain a proper balance between the potential for environmental damage, the potential for the discovery of oil and gas, and the potential for adverse impact on the coastal zone.

The OCS contains resources of many types, each with different kinds of value to the Nation. The challenge facing OCS program decisionmakers is to secure for the Nation the greatest overall value from these resources. Striking the balance among all the relevant factors is essentially a matter of judgment for which no ready formula exists. Section 18 of the OCS Lands Act recognizes this in requiring the consideration of a broad range of relevant factors rather than imposing an abstract formula. Some of those factors are covered in the cost-benefit analysis. However, while the social cost analysis attempts to quantify nonmarket values, factors such as aesthetics or special concern for marine mammals and endangered species are extremely difficult to translate into accurate economic estimates. Thus, the treatment of environmental factors in this decision document is supplemented by relevant EIS and other analyses that are incorporated by reference so that the Secretary has full and appropriate information on which to base his Proposed Final Program decision.

The U.S. Court of Appeals for the D.C. Circuit has elaborated on the statutory criteria for the balancing decision in great detail in its opinions on litigation concerning previous 5-year programs. Pertinent excerpts are presented below.

Concerning the weight of the three considerations under section 18(a)(3) the court has stated

That the Act has an objective—the expeditious development of OCS resources—persuades us to reject petitioners' view that the three elements in section 18(a)(3) are "equally important" and that no factor is "inherently more important than another." The environmental and coastal zone considerations are undoubtedly important, but the Act does not require they receive a weight equal to that of potential oil and gas discovery. A balancing of factors is not the same as treating all factors equally. The obligation instead is to look at all factors and then balance the results. The Act does not mandate any particular balance, but vests the Secretary with discretion to weigh the elements so as to "best meet national energy needs." The weight of these elements may well shift with changes in technology, in environment, and in the Nation's energy needs, meaning that the proper

balance for 1980-85 may differ from the proper balance for some subsequent five-year period. (*California I*, 668 F.2d, p.1317.)

Concerning the nature of analysis of the section 18 factors and the Secretary's discretion in weighing the analytic results, the court has said

The Act recognized the difficult burden the Secretary must shoulder by stating that the selection of timing and location of leasing must strike the proper balance "to the maximum extent practicable." The Secretary must evaluate oil and gas potential, which can be quantified in monetary terms, in conjunction with environmental and social costs, which do not always lend themselves to direct measurement. Because of this, they must be considered in qualitative as well as quantitative terms. (*California I*, 668 F.2d, p. 1317.)

In deciding whether to include an area, the Secretary weighed qualitative factors as well as quantitative factors. The Secretary listed among qualitative factors "national security, industry interest, and equitable sharing of development costs and benefits." OCSLA specifically directs the Secretary to weigh such qualitative factors in his balance.

Taking qualitative factors into account implies that the inclusion of areas with a calculated net social value of zero may nonetheless be compatible with section 18(a)(3). (*NRDC*, 865 F.2d, p. 307.)

The Secretary must make a good-faith effort to balance environmental and economic interests. So long as he proceeds reasonably, however, his decisions warrant our respect. (*NRDC*, 865 F.2d, p. 308-309.)

**D. Analysis
of
Assurance
of Fair
Market
Value**

The 5-year program includes general provisions for the receipt of fair market value in accordance with section 18(a)(4) that pertain to (1) a minimum bid requirement and (2) a process for reviewing the adequacy of bids received for OCS oil and gas leases. In addition to the minimum bid requirement and bid adequacy process the MMS establishes lease terms and conditions to assure the receipt of fair market value. Those more specific measures are designed and implemented based on ongoing reviews and evaluations that are independent of the 5-year program preparation process.

The approved 5-year program for 1992-1997 set the minimum bid level at \$25 per acre, subject to sale-by-sale reconsideration and continued use of a two-phase bid adequacy review process. A full description of that process is presented in appendix 10 of the April 1992 SID. A brief discussion is presented below, and the technical terms that are used are defined in figure 3.

The MMS process of determining bid adequacy has two phases. In Phase 1 of the process, high bids are accepted on tracts judged to contain insufficient resources to be economically viable. High bids on all drainage and development tracts and on other tracts not accepted in Phase 1 move to Phase 2. Phase 2 uses an independent government evaluation and bid adequacy rules based on the Mean Range of Values (MROV), Delayed Mean Range of Values (DROV), Adjusted Delayed Value (ADV), and Geometric Average Evaluation of the Tract (GAEOT). In addition to these criteria the high bids on certain tracts are analyzed based on other pertinent costs relating to delays in reoffering. In Phase 2, if the high bid equals or exceeds the estimated value for

an individual tract, it is accepted. Phase 2 allows the MMS an opportunity to compare its valuation with that of the high bidder.

The Call for Comment on Proposed Policy Options that the MMS published in the *Federal Register* on April 20, 1995, included options relating to the minimum bid level and to procedures for determining bid adequacy. Among the latter were options that would eliminate or restrict use of the three-bid rule and replace the GAEOT with alternative parameters. A brief summary of the responses to the Call for Comment is available in the decision document for the Proposed Program for 1997-2002. A summary of the comments received on the *Federal Register* Notice of February 7, 1996, announcing the Proposed Program, is presented in part III.B above.

The MMS eliminated the three-bid rule and is continuing to study the GAEOT to consider whether it should be modified or eliminated. Under the three-bid rule the highest of three or more qualified bids on any wildcat or confirmed tract would automatically be accepted in Phase I of the bid adequacy process. The three-bid rule was eliminated to allow the MMS to perform a full evaluation on all multibid tracts—which tend to have greater resources— rather than to base acceptance of the high bids on some wildcat and confirmed tracts solely on the number of bids received. Depending on the results of further MMS analysis, additional options for assuring fair market value might be developed for presale decisions after the 5-year program for 1997-2002 is approved.

In addition the MMS is conducting analyses related to enactment of The OCS Deep Water Royalty Relief Act, which is described in part III.B of the decision document for the Proposed Program. The results of those analyses could lead to some revisions of policies and procedures pertaining to the assurance of receipt of fair market value.

E. Appropriations and Staffing

Section 18(b) of the OCS Lands Act, as amended, requires that the 5-year program include estimates of the appropriations and staff that will be needed to:

- Obtain information for preparing the 5-year program;
- Analyze and interpret data and information compiled under the authority of the statute;
- Conduct environmental studies and prepare EIS's pursuant to NEPA; and
- Supervise operations conducted pursuant to the leases issued.

Estimated appropriations and staffing requirements for the 5-year program for 1997-2002 are presented in appendix 3. The estimates are based on the schedule of lease sales adopted in the Proposed Program (February 1996).

Adjusted Delayed Value (ADV): The minimum of the MROV and the DMROV.

Confirmed Tract: A previously leased tract having a well(s) that encountered hydrocarbons and may have produced. It contains some oil or gas resources whose volume may or may not be known.

Delayed Mean Range of Values (DMROV): A measure of the smallest high bid needed to generate bonus and expected royalty receipts from the current sale that are at least equal to the discounted sum of the bonus and royalties expected from leasing the tract in the next sale. The bonus for the next sale is computed as the MROV under the projected economic, engineering, and geological conditions, including drainage, associated with delay in leasing.

Development Tract: A tract that has nearby productive (past or currently capable) wells with indicated hydrocarbons and that is not interpreted to have a productive reservoir extending under the tract. There should be evidence supporting the interpretation that at least part of the tract is on the same general structure as the proven productive well.

Drainage Tract: A tract that has a nearby well capable of producing oil or gas, and the tract could incur drainage if and when such a well is placed on production. The reservoir from which the nearby well is capable of producing is interpreted to extend under the drainage tract to some extent.

Geometric Average Evaluation of the Tract (GAEOT): The geometric mean of the bids and the MROV, with anomalous bids excluded. This parameter is calculated as the root of 1 plus the number of bids of the product of all the nonanomalous high bids and the MROV. For example, if the high bids were \$1,419,700, \$228,500, and \$144,000, while the MROV was \$ 15,000,000, this parameter would be calculated as follows: $GAEOT = (1419700 \times 228500 \times 144000 \times 15000000)^{1/4} = \$914,938$. The high bid on this tract would be accepted, because it exceeds the GAEOT. However, if the bids on the tract were \$2,937,000, \$2,626,000, and \$2,574,000, the GAEOT would be: $GAEOT = (2937000 \times 2626000 \times 2574000 \times 15000000)^{1/4} = \$4,154,078$. In this case the high bid would be rejected, because it is lower than the GAEOT. The MROV would have to drop below \$3,748,078 for the GAEOT to fall below the high bid and for the bid to be accepted.

Mean Range of Values (MROV): A tract's expected private present value, given that the tract is leased in the present sale.

Wildcat Tract: A tract that has neither nearby productive wells, nor is interpreted to have a productive reservoir extending under the tract. It has high risk in addition to sparse well control.

Figure 3. Definition of Terms Used in the Fair Market Value Analysis

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APPENDIX 1

SUMMARY OF COMMENTS

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Summary of Comments to February 9, 1996, Federal Register Notice on the Proposed 5-Year OCS Oil and Gas Leasing Program for 1997-2002

Introduction

Section 18 of the OCS Lands Act, 43 USC 1344, requires the Department of the Interior (DOI) to prepare a 5-year OCS oil and gas leasing program. To assist in the preparation, DOI issued a *Federal Register* Notice on February 9, 1996, soliciting comments on the Proposed 5-year OCS Oil and Gas Leasing Program. The DOI has considered the comments received in response to this Notice in developing the Proposed Final Program. A summary of program comments (including those presented on behalf of U.S. Congressmen and affected States' governors) at each of the draft Environmental Impact Statement (EIS) hearings as well as a summary of the Alaska Regional Stakeholders Task Force meeting are included at the end of this appendix.

Number of Comments by Category

The DOI received 154 written comments.

Governors	6
State Agencies	13
Congress/State Legislature	0
Local Governments	11
Federal Agencies	6
Industry	12
Environmental/Other Organizations	13
General Public	93
Total	154

Summary of Comments

Governors/State Agencies

Alabama (Governor Fob James, Jr.) In an April 15, 1996, letter, the Governor of Alabama supported the proposed Eastern Gulf of Mexico sale scheduled for 2001. The Governor also encouraged MMS to further explore the option that would add 384 blocks in the deep-water portion of this planning area to the proposal. The Governor stated that Alabama has consistently supported energy programs that expedite oil and gas exploration and production, while providing careful and due consideration of environmental concerns. The Governor supported a balanced and reasonable OCS leasing program that leads to exploration, development, and production with the stipulation that all OCS activities be carried out in full compliance with relevant Alabama laws, rules, and regulations and be consistent with Alabama's Coastal Zone Management Program. The Governor recognized that natural gas is the fuel of the future, and production of this OCS resource benefits Alabama and the Nation. The Governor stated that coastal States and communities affected by OCS activities should receive a fair share of the financial benefits of such development and production. The Governor would be inclined to support a bill similar to proposed bill S. 575, which would grant a set percentage of all new OCS revenues to the States and local governments closest to OCS activities. The Governor stated that he looks forward to working cooperatively with the MMS in the successful and safe development of the hydrocarbon resources offshore Alabama and in sharing the benefits.

In a July 30, 1996, letter to the Director of MMS, the Governor modified his above comments. He requested that MMS remove all unleased tracts that are, or have been, in the Eastern Gulf of Mexico Planning Area that are located south and within 15 miles of the Baldwin County, Alabama, coast from the proposed program. The Governor cites widespread opposition to the construction of any additional visible oil and gas structures by all components of the local tourism industry, by local residents, as well as by local governing bodies in the towns of Gulf Shores and Orange Beach, the Baldwin County Commission, and by the House of Representatives of the Alabama Legislature.

The Governor will, in the future, oppose the offering for lease of any tracts in the Gulf of Mexico OCS waters located south and within 15 miles of the Baldwin County, Alabama, coast.

Alabama Department of Conservation and Natural Resources In a May 3, 1996, letter, the Alabama Department of Conservation and Natural Resources supported and encouraged the proposed program for 1997-2002. The Department stated that because much of the reserves that are discovered and produced in the Eastern and Central Gulf Planning Areas may be brought onshore in Alabama, they hope that MMS will continue its efforts to see that coastal communities who bear this burden would also share in the financial benefits.

Alaska Office of Management and Budget, Division of Governmental Coordination The Alaska Division of Governmental Coordination provided the State's final section 18 response to the 5-year program and stated that the State continues to support the 5-year MMS planning process. The State recognized the reluctance of industry to indicate specific areas of interest but believes sale areas could be more targeted and suggested that it may be useful to check with industry before the issuance of a sale draft EIS to ensure there is adequate interest to proceed with a sale in an area. Small sale areas, such as proposed Beaufort Sea Sale 170 scheduled for 1998, target areas of interest without necessarily raising concerns about areas not likely to receive bids.

They appreciated MMS's response in the 5-year program to the State of Alaska's deferral recommendations in the Barrow vicinity, along the Chukchi Polynya, in the Shelikof Strait, and the North Aleutian Basin. The State also continues to support deferral of tracts in the Gulf of Alaska, specifically tracts in the nearshore area between Cross Sound and Dry Bay and tracts at Fairweather Ground, an important fishing area; additionally, the State requested that MMS seriously consider these deferrals during the sale review process for proposed Sale 179 in the Gulf of Alaska in the proposed program.

The State of Alaska looked forward to working with MMS and reviewing individual sale proposals under the authority of the CZMA, OCSLA, and NEPA. During those reviews, they will continue their commitment to coordinate with MMS to attempt to develop similar or complementary mitigating measures in adjacent State and Federal waters. These included tract deletions, timing restrictions for drilling, appropriate controls on discharges of drilling fluids and produced waters, and oil-spill contingency planning.

The State supported the Alaska Regional Stakeholders Task Force. They suggested that in the future MMS should solicit and distribute issue statements from the participants before task force meetings. This would help focus task force discussions. The State also supported the use of a task force approach for future 5-year program planning and would be pleased to participate in stakeholders' task forces for individual sales.

California Coastal Commission The California Coastal Commission (CCC) strongly supported the decision to defer all leasing activities off the California coastline during the next program. They continue to be convinced that no new lease sales are justified anywhere offshore California at this time. It is premature to propose new leasing when so many existing leases remain undeveloped, and any new leasing should be postponed until the controversies concerning the disposition of such leases have been resolved. The CCC stated that the environmental risks posed by an expansion of oil and gas development along the California coast, particularly into undeveloped areas, are unacceptable in light of the limited economic benefits and limited contribution to U.S. oil production expected.

They appreciated the fact that the California Offshore Oil and Gas Energy Resources study was initiated in part in response to growing State and local concerns over the eventual development of existing leases in the Santa Barbara Channel and Santa Maria Basin. This study will produce pertinent information regarding the abilities of Ventura, Santa Barbara, and San Luis Obispo Counties to sustain the development of the existing undeveloped leases.

They stated that the information base that is a prerequisite to additional leases sales in California is incomplete. Substantial data gaps remain in understanding the cumulative impacts of future oil and gas development on air quality, commercial and recreational fisheries, scenic quality, marine resources, and vessel traffic safety. All socioeconomic, environmental, and oceanographic research called for by the National Academy of Science in 1989 should be completed, and measures to implement recommendations and findings should be in place first.

They stated that the mode of transporting crude oil produced offshore Santa Barbara County remains a highly controversial, disputed, and litigated issue. Lack of adequate pipeline capacity to appropriate refining centers remains unresolved. Additional capacity to Los Angeles must be developed before any new tracts are leased. They strongly urged that MMS require all new production from existing leases be transported by pipeline to the shipper's final refinery destination.

They appreciated the effort and commitment of the MMS Pacific OCS Region Office to share the Federal leasing decisionmaking process with the State and affected local governments. This cooperative Federal/State/local government approach should continue in the future.

California Resources Agency The Resources Agency of California is coordinating Governor Wilson's comments and stated that the Governor continues to insist that all portions of the Northern, Central, and Southern California Planning Areas should be deleted from the 5-year program. The Governor is pleased that DOI has chosen to defer all OCS leasing off California during the Proposed OCS Program for 1997-2002. The Resources Agency of California stated that this position is consistent with the Governor's action approving the California Coastal Sanctuary Act of 1994, which permanently prohibits leasing State Tidelands for oil and gas development activities. It is also consistent with the Governor's successful effort to secure the largest designation for the Monterey Bay National Marine Sanctuary, which permanently prohibits offshore oil and gas operations within 5,312 square miles of the OCS off California.

They stated that they are working diligently to address the impacts from existing, approved, proposed, or projected developments on many existing leases on the OCS. They stated that California remains committed to participating with MMS and local governments in the California Offshore Oil and Gas Energy Resources Study to develop a consensus-based approach to understand the cumulative impacts from existing operations.

Connecticut Department of Environmental Protection The Connecticut Department of Environmental Protection supported the proposed program. They stated that no adverse impacts would result from the proposed activities, and there are provisions to ensure that operations elsewhere would be conducted in a manner that would not impair existing coastal resources and uses.

They are concerned about the draft EIS analysis of an alternative that would consider leasing in Hudson Canyon off New Jersey. While they do not disagree that direct coastal impacts from Mid-Atlantic development would be limited to the site of a pipeline landfall, most likely in New Jersey, Connecticut could

experience indirect impacts. There is particular concern over drilling-related discharges to the canyons, which could adversely affect commercial fishing through disruption of food supplies of bottom fish.

They supported the policy objectives of consensus-based and science-based decisionmaking and the use of natural gas as an environmentally preferred fuel. They specifically supported the increased attention to two OCSLA section 18 criteria—the laws, goals, and policies of affected States, and the location of regions with respect to other uses of the seabed. They applauded the implied recognition of coastal goals and policies, which mandated the protection of living resources. Still, they remain aware that their State and the Nation rely on nonrenewable fuels, including OCS oil and gas, and they should support the pursuit of those fuels in a manner consistent with their policies.

They were disappointed that the proposed program did not analyze in detail the opportunity for revenue sharing. They stated that MMS should evaluate revenue sharing opportunities even in the absence of appropriate statutory authority to do so. They cited that proposed bill S. 575 sets out detailed formulae for allocation of impact assistance and outlines potential uses for such funds. If S. 575 is not sufficiently instructive, MMS should communicate with States and local governments as to how such sharing might be better structured.

Delaware Geological Survey The Delaware Geological Survey concurred with MMS's policies of consensus-based, science-based decisionmaking and emphasis on natural gas as an environmentally preferred fuel. They are sensitive to the importance of natural gas and its occurrence in the Mid-Atlantic OCS. Although Mid-Atlantic OCS activities are of immediate concern, the Delaware Geological Survey recognized that oil and gas exploration and development in the U.S. OCS involves national and international considerations as well as State and regional concerns.

They stated that all activities in the Atlantic OCS are influenced by moratoria and unsettled matters concerning the Manteo structure off North Carolina. They suggested that within the proposed program and through all other means available resolution of these issues be vigorously pursued.

They were considerably interested in the initial proposal of a *gas sale* option in the Mid-Atlantic OCS. They are aware of a major demonstrated natural gas discovery in the vicinity of Hudson Canyon and have indicated that a policy of constructive consideration of justified exploration consistent with assured environmental protection may permit further attention to this prospect. They stand ready to discuss the possibility of scheduling a sale in the Atlantic and to provide additional technical material at the appropriate time. Although the DOI may elect not to pursue gas in the Mid-Atlantic OCS in the course of the next 5-year program, the Delaware Geological Survey states that the prospect remains real and should not be ignored. The policy of the President and the Secretary of the Interior calling for emphasis on natural gas for its environmental benefits would appear to require concentrated attention to the known and prospective gas deposits in the Mid-Atlantic.

The State of Delaware historically has indicated through their shipping, refining, and petrochemical industries that they are very much involved with oil and gas, but they are also committed to environmental protection and high standards of quality of life. They stated that the economic desirability of Mid-Atlantic OCS natural gas still depends on the establishment of a pipeline infrastructure. Any further studies should seek definitive analysis of the prospects for pipelines as well as environmental impacts and the need for additional energy from natural gas.

Florida (Governor Lawton Chiles) The Governor of Florida stated that he was happy to learn that MMS has recognized the need to protect Florida's coastal and marine resources by excluding any new leasing within 100 miles of the coasts. He is still concerned, however, about the existing leases offshore northwest Florida and the potential dangers they represent. The Governor wants Florida to be an active participant in the decisions made for Lease Sale 181 scheduled to be held in the Eastern Gulf in 2001. Although this sale involves an area that is offshore Alabama, it is in close proximity to Florida's Panhandle and could impact the State.

Florida Department of Environmental Protection The Florida Department of Environmental Protection stated that they have no objections to the size, timing, and location of the leases described in the proposed action (one sale in 2001) or option 3 (two sales: one in 1999 in deep-water only and one in 2001). The addition of deep-water tracts or the holding of an additional sale in deep water would not be expected to present a significantly

greater risk to Florida's resources. However, increased drilling activity and infrastructure development in these areas may pose an increased risk to deep-water biota. They recommended that increased leasing and development in deep water be accompanied by adequate environmental studies and appropriate lease stipulations for the specific lease sales.

The Department continued to express its support for lease offerings of limited size and frequency, which meet the State's request for a 100-mile buffer zone. Although a portion of the sale area off Alabama would abut the western boundary of Florida's territorial sea, the restricted area off the coast should limit impacts to marine and estuarine resources. The Department complimented MMS's commitment to flexibility and partnership in developing this program and its deference to State priorities for coastal ecosystem protection. They encourage close coordination with DOI during the scoping and preparation of the draft EIS for proposed Sale 181 to ensure a favorable review of the sale under the OCS Lands Act, the NEPA, and the Federal consistency provisions of the CZMA.

Maine (Governor Angus S. King, Jr.) The Governor of Maine was pleased that no leasing is planned for the North Atlantic Planning Area in the proposed program. The Governor requested that MMS reinvolve the State of Maine on the OCS Advisory Board when there is a possibility of any interest in oil and gas and sand and gravel in the North Atlantic.

Massachusetts Executive Office of Environmental Affairs The Massachusetts Executive Office of Environmental Affairs, responding on behalf of Governor William F. Weld, remained satisfied that no OCS activity is proposed for the North Atlantic Planning Area and appears responsive to the desires of affected regions. They are prepared to work closely with the OCS Policy Subcommittee on Select Areas under Moratoria to identify information needs regarding environmental and geologic conditions in the North Atlantic. Until the necessary studies are completed and evaluated, Massachusetts will not entertain oil and gas exploration proposals. They referred to their February 1995 comments regarding relevant laws, goals, and policies that need to be considered as part of the section 18 analysis, as required by the OCS Lands Act.

New Jersey Department of Environmental Protection The New Jersey Department of Environmental Protection concurred with the proposed program's decision not to include a Mid-Atlantic sale in the next 5-year program.

New York State Department of Environmental Coordination The New York Department of Environmental Coordination agreed with the decision to leave a Mid-Atlantic sale out of the proposed schedule and continue trying to resolve outstanding issues with affected States. They agreed with the decision to adjust the weighting of section 18 criteria to put more emphasis on the views of affected States and other existing uses of the sea and seabed. They look forward to being included in a Mid-Atlantic working group to pursue interests in this area in future programs and feel it should include representatives of the commercial and recreational fishing interests that rely on the Hudson Canyon area.

They agreed with the creation of a joint subcommittee of the OCS Policy and Scientific Committees to independently review information for areas subject to restrictions on leasing.

North Carolina (Governor James B. Hunt, Jr.) The Governor of North Carolina was pleased that the Mid- and South Atlantic Planning Areas are excluded from the new leasing program. The Governor will continue to work with MMS through participation on the OCS Policy Committee to identify information needs for offshore leasing.

Rhode Island (Governor Lincoln Almond) The Governor of Rhode Island stated that he believed that deferring sales in the Atlantic region would give MMS, States, Congressional delegations, and stakeholders

outside government a chance to resolve differences and frame a future OCS program that will be acceptable to all. The Governor and State of Rhode Island wish to remain an active participant in the OCS process.

Rhode Island Department of Administration The Rhode Island Department of Administration stated that as long as Alternative 5, the option in the draft EIS on the Proposed OCS Program for 1997-2002 that considers a small sale in the Mid-Atlantic Planning Area, is an option, then Rhode Island will consider itself a potentially impacted State and requests that they be included in all subsequent solicitations for comment. Rhode Island is unique since it is part of the Mid-Atlantic Planning Area and has already hosted a single support base for OCS activities in both the North Atlantic and Mid-Atlantic.

Texas Natural Resource Conservation Commission The Texas Natural Resource Conservation Commission supported Alternative 4 in the draft EIS for the proposed program. They stated that it would not greatly reduce the estimated petroleum production for the Nation or significantly impact economics. They believe that this alternative is an acceptable balance between economics and protecting habitats/species in relatively undisturbed areas.

They stated that lease sales in the Western Gulf of Mexico will potentially impact the Beaumont/Port Arthur and Houston/Galveston ozone nonattainment areas. They will not require a general conformity analysis now but will require an analysis when the leases are actually sold and the exploration/drilling/production plans are submitted.

Virginia Department of Environmental Quality The Virginia Department of Environmental Quality was disappointed that MMS is not proposing a lease sale in the Mid-Atlantic region. The legal difficulties associated with the *Manteo Prospect* off North Carolina should not cause MMS to discourage future leasing opportunities in this region. They recommended that the lease opportunities offered in the Mid-Atlantic region be reinstated.

If a decision to reconsider leasing is made, they recommended that various environmentally sensitive areas, which were excluded from the OCS Program for 1992-1997, continue to be protected and additional information regarding the potential environmental impacts of oil and gas spills be required before issuance of individual leases.

Washington (Governor Mike Lowry) The Governor of Washington was pleased that the proposed program includes no consideration of a lease sale off Washington's coast. The Governor of Washington cited an agreement with the DOI in 1990, developed by the Pacific Northwest OCS Task Force, that "no sales will be considered for the Pacific Northwest until a series of studies are completed for the region." The Governor understands and expects that this agreement stands as DOI policy regarding leasing off Washington's coast. The Governor stated that in 1989 the State of Washington passed the Ocean Resources Management Act, which included a moratorium against oil and gas leasing in State waters. The Governor envisions this Act being extended into the next century.

Local Governments

Alabama

City of Bayou La Batre The City of Bayou La Batre supported offshore drilling in the Eastern Gulf of Mexico, while expecting careful consideration of environmental issues.

City of Orange Beach The City of Orange Beach opposed the relaxation of any moratoria that could result in the construction of visible exploration or production structures within practical view of the beaches. They did not oppose leasing of mineral rights, exploration, or production greater than 15 miles from shore. The City Council stated these policies in a resolution passed on May 7, 1996.

(**Note:** The Alabama Gulf Coast Area Chamber of Commerce attached resolutions of elected city councils of Gulf Shores, Orange Beach, and Foley. They also attached their own resolution as well as resolutions from the Alabama Gulf Coast Convention and Visitors Bureau and the elected Commission of Baldwin County. The resolutions were all similar to the policies stated above by the City of Orange Beach.)

Alaska

Bering Straits Coastal Resource Service Area The Bering Straits Coastal Resource Service Area was concerned with the following: (1) the danger that oil and chemical spills cause for migrating marine mammals, waterfowl, fish, and other wildlife that are used for food by Alaska Natives and (2) ice formation and its impact on humans and machinery used to clean up oil spills. They stated the need for a fund to be created to compensate or replace food resources lost to subsistence users without having to prove damages. They also stated that before any oil and gas leases are offered, both the Federal Government and the State of Alaska should offer onshore oil and gas leases, as well as other resources such as coal.

City of Kaktovik The Mayor of the City of Kaktovik stated that the documents for the proposed program fall far short of allaying deep-seated concerns about offshore leasing in the Beaufort Sea. The Mayor believes the draft EIS understates the prospects for serious negative impacts on the resources, livelihood, and culture of their community. The Mayor believes that it is impossible to use the draft EIS to analyze cumulative effects of past, current, and projected leasing.

The Mayor stated that they are being asked to accept the tradeoff of risking their livelihoods and community well-being to enhance the Nation's oil supply with a risky offshore drilling program while far less risky onshore prospects languish due to Federal policies of this Administration. They are unwilling to accept this tradeoff.

The Mayor suggested that they have not seen anything to sow potential damage from sales in the proposed program can be prevented enough (through mitigation) to alleviate their concerns such as prospective harm to bowhead whales from oil exploration and production activities and the failure of either government or industry to demonstrate the capability to deal effectively with oil spills in the Beaufort Sea.

The Mayor stated that problems with the offshore leasing program and draft EIS are frustrating to them since these offshore areas are part of their homelands in that they have never been ceded. Additionally, the Mayor opposed the State of Alaska's offshore leasing program in the Beaufort Sea as well.

Kodiak Island Borough The Kodiak Island Borough believed the proposed program is consistent with earlier recommendations of the Alaska Regional Stakeholders Task Force. The Kodiak Island Borough has been an active Task Force participant. The Borough has no objections to proposed Cook Inlet/Shelikof Strait Sale 173, tentatively scheduled for 1999. The Borough also stated that it is not opposed to proposed Cook Inlet Sale 149 in the current OCS program, although they have recommended that changes be made to proposed lease stipulations and information to lessee clauses in the proposed Notice of Sale.

Kotzebue IRA Kotzebue IRA opposed oil and gas development in the Chukchi Sea and Hope Basin due to inadequate cleanup capability of large oil spills. They recommended that MMS create another alternative to the proposed action to omit both the Chukchi Sea and Hope Basin Planning Areas.

The Native Village of Point Hope The Native Village of Point Hope opposed the proposed program on behalf of the animals, people, and nature. They recognized that the oil industry takes environmental precautions very seriously, but they are still concerned about an oil spill contaminating the environment, killing animals, and affecting the health of the people. They requested that the oil industry investigate the health of the animals and look for deterrents to keep the animals healthy. Each year the people of the Native Village of Point Hope find animals that have unexplained illnesses. Their culture revolves around the animals that come from the land and the water.

North Slope Borough The North Slope Borough stated the need to fully incorporate within the 5-year program final EIS the mitigating measures recently developed for inclusion in the Beaufort Sea Sale 144 final EIS and the general concepts they contain. They stated that the negotiation process, which included a very successful April 3, 1996, meeting in Barrow, produced a greatly strengthened package of mitigating measures. However, the enhanced measures developed for Sale 144 in no way lessen the Borough's general opposition to offshore leasing, but do provide for improved bowhead whale monitoring studies; ensure greater Borough and Alaska Eskimo Whaling Commission involvement in all aspects of study design, conduct, and review; and, define a mechanism for the resolution of conflicts between industry and affected coastal communities. They urged MMS to quickly approve the mitigating measures and other terms negotiated for proposed Beaufort Sea Sale 144 in the current 5-year program, and to fully incorporate those provisions where possible into the final EIS for the 5-year program for 1997-2002. They expressed their readiness to work with MMS to create better, more useful and accurate planning documents in the future.

The North Slope Borough also stated that the bowhead whale feeding area east of Barter Island to the Canadian border should be deferred from future sales including the proposed Beaufort Sea Sale 176 scheduled for 2000. They stated that their experiences of the past in this area east of Barter Island to the Canadian border would be evidence to support their claim that a drilling operation active during the fall whaling season would be inconsistent with those provisions of the North Slope Borough Coastal Management Program that explicitly prohibits development that prevents subsistence user access to a subsistence resource. The North Slope Borough contended that more troublesome than exploration drilling operations, which can be conducted seasonally, production facilities would have year-round impacts. They doubt that a permanent offshore production facility east of Barter Island, and in the fall migratory path of bowhead whales, could ever be operated without continuing significant interference with Kaktovik's subsistence hunt. If leasing occurs in this area, the North Slope Borough and the Alaska Eskimo Whaling Commission will aggressively use whatever measures they can to prevent such operations from occurring again.

They stated that previous Beaufort Sea lease sale documents have indicated that the hydrocarbon potential of the planning area would drop only 10 percent if the Kaktovik deferral area was not included in the area of leasing consideration. If the April 10, 1996, *Federal Register* Notice requesting industry interest in the proposed Beaufort Sea Sale 144 in the current 5-year program indicates a lack of interest, the North Slope Borough believes that MMS has no justification left for continuing to include the Kaktovik deferral area in proposed Sale 176.

They stated that there is no mention of polar bears within the discussion of expected lethal and sublethal effects of the proposed program on arctic species in the Beaufort Sea and Chukchi Sea/Hope Basin in parts of the Decision Document. Elsewhere it was noted that lethal effects on perhaps a large number of polar bears could be expected from oil spills occurring under the proposed program.

They stated that there seems to be an inconsistency in the Decision Document because it states that a combined Chukchi and Hope Basin sale would result in most of the leasing activity taking place in the Chukchi Sea, which seems inconsistent with the statement that impacts on sociocultural systems would be centered predominantly in the Northwest Arctic Borough, primarily because of impacts to harvests from oil spills.

Florida

South Florida Regional Planning Council The South Florida Regional Planning Council supported the positions of the Governor's office and Florida's Coastal Management Program on restricting oil and gas leases that may result in negative impacts to Florida's shoreline and waters of the State. The Council commended the selection of all lease areas outside these waters in this iteration of the leasing program. They cited specific goals and policies of the *Strategic Regional Policy Plan for South Florida* that, while not directly addressing oil and gas leasing, encourage protection rather than exploitation, of marine resources.

West Florida Regional Planning Council The West Florida Regional Planning Council found the proposed program in accord with State plans and goals and objectives of the Council. The Council stated that the proposed program is consistent with the Comprehensive Regional Policy Plan, 29A-2.001, FAC, amended August 1991. The Environmental Planning staff of the Council reiterated their objections to any activity off Florida, with references to the Draft Proposed Program (August 1995) where their comments were summarized. They continue to disagree with any boundary move between the Central and Eastern Gulf Planning Areas and choose option (4) *Other* as their preference. The Environmental Planning staff of the Council cited, as a condition for being permitted to develop offshore resources in the Eastern Gulf, financial benefits to local governments and the State should be provided. Use of Florida's ports, pipelines, and industrial parks should be required.

Louisiana

Port Fourchon The Executive Director of the Greater Lafourche Port Commission of Port Fourchon cited the tremendous impact that OCS activity is bringing to the highway structure of Port Fourchon and Lafourche Parish. He stated that it is the closest port to the large majority of deep-water prospects in the Central Gulf and is the port of choice for deep-water activity. Cargo tonnage has tripled in the last 3 years and this year will exceed the tonnage handled by the Port of New Orleans, and 90 percent of this tonnage is OCS related.

The Executive Director stated that Port Fourchon is the land base for the Louisiana Offshore Oil Port, the Nation's only offshore oil port. The Louisiana Offshore Oil Port handles 11 percent of the nation's imported oil and is connected by pipeline to 30 percent of the U.S. refining capacity. It is now preparing to accommodate domestic deep-water oil. All of these activities are dependent on Louisiana Highway 1 for logistics and support. This highway was not designed for the burden of OCS support services the development of the deep-water Mars and Auger OCS projects will demand. The Executive Director stated that this issue goes far beyond the State's concern and is an item of national significance and responsibility.

The Executive Director requested State assistance in building a new highway system to and from Port Fourchon in a presentation to Governor Foster of Louisiana in May 1996.

North Carolina

Mayor of Wilmington The Mayor of Wilmington, North Carolina, directed the majority of comments to the draft EIS. In doing so, he stated the city's objection to one of the alternatives to the proposed program that would include a sale of approximately 223 tracts in the Mid-Atlantic Planning Area. The Mayor cited Policies for Growth and Development pursuant to the North Carolina Coastal Area Management Act adopted in 1993 by the Wilmington City Council and the New Hanover County Board of Commissioners. The Mayor stated that the "development of all offshore mineral, oil and gas resources shall be discouraged" (Section 2.2(2), Wilmington-New Hanover County Policies for Growth and Development). The development of such tracts could have direct adverse impacts on the city, county, and southeastern North Carolina. He questioned the conclusion that impacts would be limited to the immediate vicinity of platforms and pipelines.

Federal Agencies

National Aeronautics and Space Administration The National Aeronautics and Space Administration had no environmental concerns about the proposed program since areas proposed for leasing consideration are limited to portions of Alaska and the Gulf of Mexico. If the decision is altered to include areas off the east coast of Florida, the Atlantic Ocean off the Middle Atlantic States, or areas off the coast of California, they desire a further opportunity to comment.

National Oceanic and Atmospheric Administration The National Oceanic and Atmospheric Administration stated that there is no indication that MMS has addressed the CZMA's Federal consistency requirement for the proposed OCS leasing program. The Federal consistency requirement would apply to the proposed OCS leasing program if this action is reasonably likely to affect any land or water use or natural resource of the coastal zone. They strongly encouraged MMS to work with appropriate State coastal management agencies as early as possible in order to identify and address State coastal management concerns. They stated that if there is sufficient information to reasonably determine the consistency of the proposed OCS leasing program with affected State coastal management programs, MMS would provide States with a consistency determination and supporting information. They suggested that the proposed program be submitted to the Congress, the governors, coastal management agency heads of the affected States, and the Attorney General.

They provided comments on the draft EIS and stated that the Straits of Florida Planning Area should not be considered for leasing unless the concerns of the State of Florida are addressed. They stated that the portion of the Eastern Gulf of Mexico south of 26° N. latitude and east of 86° W. longitude should be excluded from the proposed program. Until studies are completed in this area, consideration of leasing is inappropriate. They recommended that the State of Florida be given full consideration regarding leasing within 100 miles of the Florida coast in the Eastern Gulf of Mexico. They strongly encourage MMS to work with appropriate State coastal management agencies as early as possible to identify and address State coastal zone management concerns.

They stated that MMS has failed to fully discuss and present conclusive scientific data to support the categorical exclusion determinations for the live bottom area in the Central and Western Gulf of Mexico. They stated that MMS's primary productivity analysis and ranking of regions must include the economic and social values of commercial and recreational fisheries, and they questioned MMS's claims that relevant economic data are not available. They suggested that MMS notify the National Geodetic Survey at least 90 days before any planned activities that will disturb or destroy geodetic control monuments.

U.S. Department of Energy The Department of Energy stated that, as they said in their earlier comments and in the National Energy Policy Plan, the proposed program recognizes U.S. current and projected energy supply situation, U.S. growing reliance on imported oil, and the potential for natural gas to play an increased role in the U.S. energy supply mix. The proposed program, through a reliable lease sale schedule in the Central and Western Gulf of Mexico Planning Areas, recognized this situation and provides continued opportunity for expeditious development in those planning areas.

The Department suggested that while the future of oil and gas exploration in that portion of the Gulf of Mexico OCS that lies shoreward of the continental slope remains bright over the short and medium term, due primarily to recently developed subsalt imaging and the detection of previously *unseen* reservoirs; over the longer term this area will experience a steady decline of returns. The OCS areas that have only been lightly explored potentially can make a great contribution to U.S. energy supplies in the long run.

They stated that environmentally sound development of OCS oil and gas resources is critical to fulfilling our Nation's energy supply needs. The proposed program may be the most politically acceptable OCS leasing program for the next 5 years, but bolder action will be required in the future to meet the Nation's energy needs. The crucial importance of the OCS leasing program to the Nation's future supply of natural gas in particular, as well as crude oil, is very apparent given the fact that only three regions of the United States—the western U.S. region (primarily on- and offshore California), Alaska on- and offshore, and the Gulf of Mexico OCS—are expected to have undiscovered deposits of sufficient volume to be of long-term national supply significance. A potential fourth is the Atlantic OCS.

The Department accepts MMS's judgment that a Pacific OCS lease sale may be premature for the OCS Program for 2002-2007. Given the very high resource potential, its proximity to existing infrastructure, industry interest, and recent comments by the Santa Barbara County Government regarding conditions for a possible future lease

sale, the DOE urged MMS to make every effort to schedule a modest lease sale in the Southern California Planning Area early in the OCS Program for 2002-2007.

The Department recognized that MMS is considering leasing other areas, specifically in the Eastern Gulf of Mexico and the Mid-Atlantic area. They would support leasing including these predominantly natural gas-prone areas for leasing later in the schedule if an appropriate level of consensus can be reached so that industry can justifiably expect that it will be able to develop leases if it acquires them. Several Mid-Atlantic State governors have expressed willingness to discuss the possibility of proceeding with leasing off their coasts. The Department suggested that MMS begin a meaningful dialogue with the affected States and communities in order to plan for an actual Mid-Atlantic lease sale by 2002.

The Department commended MMS for creating the Joint Subcommittee on Environmental Information for Select OCS Areas Under Moratoria. If the Joint Subcommittee recommends additional studies, the Department urges that areas of high resource potential, especially those in or adjacent to areas with existing infrastructure, be given priority.

They supported the continued use of consensus-based decisionmaking for areas included in the Proposed Program as well as those OCS areas restricted from leasing. They suggested that one way to increase the chance of achieving consensus is to increase public knowledge of the important role of domestic resources in our Nation's economy and security and the actual level of associated risks.

U.S. Department of the Navy The U.S. Department of the Navy endorsed the proposed program. The Navy recognized MMS's efforts to craft a program that adopts a well-balanced long-term national energy program and also considers national defense and other needs. They requested that if changes are again made to the program, then their office be notified.

U.S. Environmental Protection Agency The Environmental Protection Agency stated that although Alternative 5 (consideration of a sale covering approximately 1.2 million acres in the Mid-Atlantic Planning Area near Hudson Canyon) of the proposed program draft EIS is not the preferred alternative, the draft EIS does not eliminate this alternative from consideration. The EPA disagreed with the conclusion that OCS activities, under this alternative, would not likely add significant environmental stress to the Hudson Canyon environment.

They questioned the reasons for the selection of 672 blocks for leasing consideration in the Eastern Gulf of Mexico. They also questioned the 100-mile buffer in the preferred alternative in the Eastern Gulf since areas off the Alabama coast are included, which are within 100 miles of the Florida coastline.

They stated that the reasons for lease sales in terms of the supply and demand for hydrocarbon products should be included in the final EIS. They believe that those stipulations applied to previous OCS lease sales should be applied to the proposed lease sales in the OCS Program for 1997-2002.

U.S. Fish and Wildlife Service The U.S. Fish and Wildlife Service supported the proposed program, which does not expand lease areas in the Mid-Atlantic or Eastern Gulf of Mexico. They suggested that a more detailed map of the Eastern Gulf of Mexico draft EIS alternatives be included in the final proposal. They recommended that oil-spill analyses be included for the Mid-Atlantic lease areas.

Environmental/Other Groups

Alabama Gulf Coast Area Chamber of Commerce The Alabama Gulf Coast Area Chamber of Commerce opposed the relaxation of any moratoria in the Eastern Gulf of Mexico that could result in the construction of visible exploration, or production structures within practical view of beaches. They did not oppose mineral leasing, exploration, or production in locations greater than 15 miles from beaches. They are adamant about

exploring mineral resources in locations no closer than 15 miles from beaches and in such a manner as not to harm the visual and environmental integrity of the area. Resolutions adopted by elected city councils were included.

They enclosed resolutions from the city councils of Gulf Shores, Orange Beach, and Foley, the Alabama Gulf Coast Area Chamber of Commerce, the Alabama Gulf Coast Convention and Visitors Bureau, and the elected Commission of Baldwin County opposing further construction of any visible structures used for the exploration or production of petroleum resources in State or Federal waters within 15 miles of the Alabama coast and any new leasing or relaxation of any moratoria that could result in the construction of such structures within practical view of the beaches.

Alaska Eskimo Whaling Commission The Alaska Eskimo Whaling Commission recognized and appreciated MMS's consensus-building approach to oil and gas activities on the OCS. They incorporated by reference their previous comments and focused on the need for clear guidelines governing interactions between oil and gas operators and subsistence users in the Arctic OCS during the Fall open-water season. They encouraged MMS to incorporate within all Beaufort Sea and Chukchi Sea lease sales protection for marine resources and subsistence activities consistent with the statutory requirements of the Marine Mammal Protection Act.

They recommended that MMS incorporate within the Proposed Program for 1997-2002 the Mitigating Measures from the final EIS for Beaufort Sea Sale 144 as agreed to by MMS, the National Marine Fisheries Service, the State of Alaska, the North Slope Borough, the Alaska Eskimo Whaling Commission, ARCO Alaska, and BP Alaska in Barrow, Alaska, on April 3, 1996.

They recommended that in the Beaufort and Chukchi Seas, lessees attempt to obtain the agreement of representatives of subsistence users to the relevant operations plan before initial operations. For compliance, they requested: (1) the operator solicits written comments from affected communities on the operator's proposed plan no later than 4 months prior to initial operations; (2) the operators and affected communities work out differences through bilateral negotiations; and (3) if differences have not been resolved 30 days

prior to initial operations, schedule a meeting among affected parties and MMS, chaired by a facilitator in order to reach a resolution on outstanding issues.

Alaska Marine Conservation Council The Alaska Marine Conservation Council continued to recommend that in the proposed program the Chukchi Sea, Hope Basin, Cook Inlet, and Gulf of Alaska lease sales be removed from leasing consideration and subsistence hunters' concerns along the Beaufort Sea be fully considered. The Chukchi Sea sale planned for the current OCS program was canceled in early 1995. They suggested that no new information exists to support a lease sale in the Chukchi Sea. The Council stated that the State of Alaska opposed the proposed Cook Inlet Sale 149 in the current program due to environmental risks. They concurred that Cook Inlet should be removed from leasing consideration. The State canceled its Lease Sale 79 planned for State waters of the central Gulf of Alaska. The Alaska Marine Conservation Council urged MMS to follow the Governor's lead and remove the proposed OCS sale in the Gulf of Alaska from the proposed program.

They stated that the impact of the proposed program in the proposed Alaska lease sale areas will adversely affect subsistence resources and harvests in a way that is an unacceptable consequence of development. They suggested that the OCS program loses credibility each time government representatives return to communities where the case for protecting an area has already been made.

They stated that the amount of oil and gas projected to be produced from the Alaska lease sales is a tiny fraction of what the United States consumes. Any energy not produced from the Alaska OCS can easily be replaced through the simplest improvements in energy efficiency.

Bay County Audubon Society (Florida) The Bay County Audubon Society was opposed to any leasing that would permit oil and gas drilling off Florida. They believe offshore drilling is incompatible with Florida's

environment, economy, and quality of life, particularly in northwest Florida. They did not believe the claim that any leakage or spillage can be cleaned up. They would support a decision by MMS to encourage development of alternate energy sources, particularly solar power.

Bay County Republican Executive Committee (Florida) The Bay County Republican Executive Committee was opposed to any oil or gas leasing or drilling in Federal waters off Florida. They stated that any gains to Florida from offshore development are outweighed by adverse effects of drilling.

Citizens Association of Bonita Beach (Florida) The Citizens Association of Bonita Beach, Florida, stated that they must keep any form of oil exploration/leasing/drilling offshore of Florida from occurring. They stated that the Eastern Gulf sale areas depicted in the proposed program could impact Florida. Proposed Program Map 8 brings the areas too close to Pensacola and could also affect the military airport in that area. Map 9 is too close to Pensacola and could impact Tampa and St. Petersburg. Map 10 is further from Pensacola but could impact Tampa, St. Petersburg, and even Naples to the south. Although these areas have been located to abut the existing area from Alabama, they strongly objected to any extension closer to Florida shores. They chose option (2) “No Sale” as the only satisfactory option.

They continued to call for the following items: (1) a buffer zone of a minimum of 100 miles; (2) the temporary moratorium near southwest Florida be made permanent with any expenses being borne by the Federal Government; and (3) the deferral area off southwest Florida be increased northward to the 28th parallel and be made permanent except in case of national emergency.

They stated that the proposal at long last respects the Governor’s request for a 100-mile buffer that provides a slight advantage to prepare for a spill coming on shore. However, they realized that when the prevailing wind comes to Florida from the Central or Western Gulf, a major oil spill or even a minor one or trash from oil rigs could reach the western shore of Florida. They pointed out the recent *red tide* and questioned whether anyone can say if it is not caused by existing oil rigs in the Central and Western Gulf.

They stated that Florida accounts for less than 1 percent of oil industry employment but that even in 1990 an oil spill could decrease visitors in Lee County alone by 31 percent or over 1 million visitors, resulting in a \$392 million loss in tourism. That amount could jump to \$590 million if direct and indirect tourism is considered.

They asked that the Federal Government look into establishment of alternative fuels and that there should be strict tanker enforcement laws for transportation of fuels and chemicals with mandatory financial responsibility by the purveyors for catastrophic spills.

Dauphin Island Sea Lab Dauphin Island Sea Lab, a consortium of Alabama public and private colleges and universities, supported the opening of the lease area in the Eastern Gulf of Mexico off Alabama. They hope that if there is hydrocarbon production in Federal waters off Florida, but the product is transported to and processed in Alabama, Alabama will receive impact assistance.

Legal Environmental Assistance Foundation (Florida) The Legal Environmental Assistance Foundation opposed any leasing off the Florida and Alabama coast. They stated that the Nation needs a comprehensive, sustainable energy policy that does not rely so heavily on finite fossil fuels. They stated that MMS flaunts the law by continuing to permit new oil and gas wells in the Eastern Gulf of Mexico citing requirements of the OCS Lands Act that information about effects of drilling on this area’s environment, economy, and way of life is supposed to be obtained before decisions are made about development and production.

They urged no lease sales in or within 100 miles of the Eastern Gulf Planning Area until the environment and socioeconomic impacts of drilling on Florida are fully understood and a practical mitigation plan is in place. They urged the issuance of a Presidential Executive Order to protect offshore Florida from exploration and production drilling on new leases and on the 157 existing leases in the Eastern Gulf.

The Little Lagoon Preservation Society, Inc. (Alabama) The Little Lagoon Preservation Society, Inc. opposed leasing in the Eastern Gulf of Mexico outside the 3-mile State boundary off Gulf Shores and Orange Beach. They opposed lifting the leasing moratorium in the Eastern Gulf of Mexico. They believe that oil and gas drilling would bring disruption and pollution to their beaches, damage the environment, and harm their lifestyles, tourism, and economic development.

Maniilaq Association (Alaska) Maniilaq Association recommended no leasing in the Chukchi Sea/Hope Basin region in the proposed program based on environmental factors and inadequate technology to clean up an oil spill in ice. They recommended no action in the Chukchi Sea/Hope Basin due to President Clinton's Executive Order 12898 of February 11, 1994, focusing on the environment and human health conditions of minority populations and low-income populations with the goal of achieving environmental protection for all communities.

They stated that oil and gas activities in the Chukchi Sea/Hope Basin area can change migration patterns of beluga, bowhead whales, and spotted, ringed and bearded seals. They cited a State of Alaska survey that indicated 40 percent of the diets in the households of the Native Village of Kivalina is composed of marine mammals.

They stated that the oil industry has a low amount of interest in the Chukchi Sea/Hope Basin region. They suggested that no leasing be considered because of low interest. They suggested that the Federal Government should shift to alternative energy such as solar energy to ensure a healthy environment.

They stated that DOI has a moral, legal, and political relationship with the Federally recognized tribes. They asked that the government to government relationship be upheld by respecting the concerns expressed to oil/gas exploration in the Chukchi Sea/Hope Basin region and that no action be taken.

The Mobile Bay Audubon Society (Alabama) The Mobile Bay Audubon Society included a copy of their letter to President Clinton in which they requested him to sign an Executive Order continuing the moratorium on leasing activity in the Eastern Gulf of Mexico and place a 1-year drilling ban in DOI's budget. They noted that the State of Alabama supports new offshore leasing either by changing the moratorium or moving the planning area boundary separating the Eastern and Central Gulf of Mexico.

The Society stated that there are too many unknowns identified in the EIS's to continue offshore leasing programs. The identified and unidentified impacts on marine life, water quality, and human health have been unknown, minimally discussed, or ignored. They believe that the DOI has used mitigation to legitimize continued leasing.

They stated that coastal Alabama is doing more than their share of providing the Nation with natural gas. There is no management plan in place that has identified the consequences of the growth and development of this industry on coastal resources or human health. They stated that their air is polluted and their water supplies are impacted—with no idea of how the toxins and hazardous materials are impacting their marine and human health. There is an exceedingly high rate of lung diseases, immune system deficiencies, and infant mortalities.

They noted that MMS is under stringent time constraints to implement Deep Water Royalty Relief in the Gulf of Mexico and will quickly draft interim regulations. The Mobile Bay Audubon Society believes that deep-water development will pose additional threats to the ocean's resources and water-quality degradation and pose additional threats for spills, accidents, and explosions. They believe that there are endemic, unique chemosynthetic communities and other areas of unknown biological significance in deep water. They do not believe that MMS has the information to properly provide protection, and they stated that this violates NEPA.

Romar Place Condominium Association (Alabama) The Board of Directors of the Romar Place Condominium Association of Alabama registered its dismay with the opening of the immediate offshore areas of Gulf Shores and Orange Beach, Alabama, to the erection of drilling platforms in the Gulf of Mexico. The value of their property—both esthetically and financially—will be greatly reduced if platforms are erected within 20 miles of the

beach. They stated that visible rigs will have a tremendous adverse effect on tourism in the area, which will in turn have an adverse impact on jobs in a place where tourism is about the only source of income.

Sierra Club, Coastal/Oceans Forum/Gulf Coast Regional Conservation Committee The Sierra Club, Coastal/Oceans Forum, supported the rejection of leasing in 10 areas. They disagreed with leasing in the proposed Alaska areas and the Eastern Gulf of Mexico. They approved of the no leasing policy in the Pacific and Atlantic. They did not oppose leasing in the Western and Central Gulf.

They stated that the Beaufort Sea's aquatic environment is too fragile to support open-ocean discharge of cuttings and waste mud during the short drilling season. Shunting should be stipulated where the water is deep enough. Building pipelines to the existing Trans Alaska Pipeline to serve this area will cause extensive damage to ANWR and promote its development. This area should be held for the future. They do not wish to repeat the recent failure to receive bids in two onshore sales in Alaska and the attempts to force leasing to the point of subsidies and payments only from production.

They opposed leasing in the Chukchi Sea/Hope Basin, Cook Inlet/Shelikof Straits, and Gulf of Alaska due to lack of discoveries in the past, lack of infrastructure, and potential for specific environmental dangers.

They approved the retention of the existing boundary between the Eastern and Central Gulf Planning Areas and ask for clarification as to how the proposed Eastern Gulf sale area meets the Governor of Florida's request for no leasing within 100 miles of the coast. They requested that there be a geophysical element in studies of the coastal areas of Florida, which includes databases of existing wells offshore Florida and near Alabama waters. There should be liaison with Alabama to include their leases and permits.

Industry

Alaska Oil and Gas Association The Alaska Oil and Gas Association recommended that sales scheduled for 1997-2002 be held as recommended and that Sale 158 (Gulf of Alaska, Yakutat) and Sale 149 (Lower Cook Inlet) be held concurrently with scheduled sales. They were concerned that Sale 158 and Sale 149 will be delayed past July 1, 1997, when the current 5-year program expires. They recommended that both sales be held in the current 5-year program.

They suggested that MMS consider modifying lease terms and provisions to make future exploration activities on the Alaska OCS more attractive to industry by making the system more competitive with royalty relief for the Alaska OCS Region similar to deep-water royalty relief in the Gulf of Mexico; making the OCS minimum bid competitive with the State of Alaska minimum bid; changing the primary lease term to 10 years for all leases on the Alaska OCS; and making OCS lease rentals more competitive with Alaska State leases and other leases in the United States.

American Petroleum Institute The American Petroleum Institute supported the proposed lease sales as scheduled in the proposed program except in the Eastern Gulf of Mexico. They supported Option 3(b) (expand the program area by adding 384 blocks in deep water for sales in 1999 in the deep-water portion of the program area and in 2001 in the program area) in lieu of Option 1 (a sale in 2001 in the program area). They stated that the MMS analysis indicates that option 3(b) has a higher net social value than Option 1.

They were concerned that by relying more on MMS evaluation of leases, rather than the market's evaluation, fair market offers will be rejected. They urged MMS to reinstitute the three-bid rule for the fair market value procedures for all future sales and to maintain the minimum bid level at \$25 per acre for all sales.

[Note: MMS wishes to clarify a statement made regarding the American Petroleum Institute's comments on page 1-27 in MMS's February 1996 *Proposed Outer Continental Shelf Oil and Gas Leasing Program 1997 to 2002 Decision Document*. Regarding coastal impact assistance, the American Petroleum Institute's principle 3 should

read “(3) participation by the state in any other Federally-funded program will not be a factor in the OCS revenue formula.”]

ARCO Alaska, Inc. ARCO Alaska, Inc. suggested that if Sales 149 (Cook Inlet) and 158 (Gulf of Alaska/Yakutat) are delayed beyond the current 5-year program, then the OCS Program for 1997-2002 proposed sales for Alaska be rearranged as follows: Cook Inlet/Shelikof Strait - 1997; Gulf of Alaska - 1998; Beaufort Sea - 1999; Cook Inlet/Shelikof Strait - 2000, Beaufort Sea - 2001; and Chukchi Sea/Hope Basin - 2002. They have an interest in all of the above areas, but their current interest in the Chukchi Sea and Hope Basin is extremely low.

They suggested modifications to the Alaska leasing program to attract increased investments as follows: (1) lower the minimum bid; (2) make all primary lease terms 10 years; (3) lower rentals on OCS leases; (4) consider offering portions of lease blocks so that the lessee does not bid for nonprospective acreage; and (5) consider applying to the Alaska OCS deep-water royalty relief provisions applicable to Gulf of Mexico water depths of 800 meters or more.

They stated that perhaps it is time to consider a complete revision of the system under which Alaska OCS areas are leased to make these areas more competitive in the global economy.

BP Exploration (Alaska) Inc. BP Exploration (Alaska) Inc. stated that while the development of alternative energy sources coupled with efforts to conserve energy are in the best national interest, they do not believe that we can afford to lose sight of our Nation’s continued reliance on oil and gas as its major energy supply well into the next century. It is of strategic importance that the Nation is afforded every potential avenue of increasing its domestic oil supply to meet the increasing demand and offset its dependency on imported oil.

They supported the current approach taken by MMS regarding cooperative relationships with States and local communities. They supported the increased involvement of the MMS regions in developing the 1997-2002 Program. A regionally tailored approach to lease sales is imperative given the diversity of issues confronting each region. They are supportive of the increased dialogue between the MMS regions and industry.

They supported a small sale in 1998 on nearshore blocks and another sale in the program area in the year 2000 in the Beaufort Sea. The sale schedule should be accelerated whenever possible. Declining national production warrants special attention for areas that could provide the earliest possible production and offset to decline. The Beaufort Sea offers the most opportunities for early production given its proximity to infrastructure.

They stated that due consideration should be given to a leasing program that encourages early industry activity in the Beaufort Sea. They suggested that recent changes in the State of Alaska’s regulatory community have promoted partnering with industry to achieve mutually beneficial goals. They valued this approach and recommended adoption on the OCS.

They believed that existing bidding systems are adequate. However, when warranted, they supported consideration of alternative bidding systems and lease terms intended to encourage activity and make more attractive investment opportunities available. They supported the proposed change in planning area boundary between the Chukchi Sea and Beaufort Sea.

CalResources LLC CalResources philosophically believes all three California OCS planning areas should be available for exploration and production. They accepted the proposal not to schedule lease sales during the proposed program because they recognized that congressional moratoria, mandated environmental studies, and unresolved issues would make leasing in these planning areas during the proposed 5-year program highly controversial.

They encouraged MMS to move expeditiously to complete the required scientific, technical, and environmental studies for all three California OCS planning areas and to aggressively pursue the resolution of conflicts. They hope that this will increase the likelihood of lease sales in the planning areas in the 2002-2007 program.

They believe that is important that State and local communities more directly benefit from OCS development. They supported a program that shares Federal royalty revenues with State, county, and municipal governments impacted by offshore oil and gas development. This would encourage companies and local communities to work out their differences and proceed with development.

They encouraged continuation of the California Offshore Oil and Gas Energy Resources study and Tri-County Forum. While they support MMS's participation in these efforts, they encouraged MMS to guard against the perception that it is abdicating or sharing its authority over the OCS with State, county, and municipal governments or regional stakeholder task forces.

Chevron U.S.A. Production Company Chevron U.S.A. Production Company favored annual areawide leasing in the entire Eastern Gulf of Mexico. Chevron offered the following options, in order of preference, toward opening the Eastern Gulf consistent with the Central and Western Gulf of Mexico: (1) open all of the Eastern Gulf outside of the Florida 100-mile line to annual or periodic leasing and institute a regional task force to address future expansion into the 100-mile coastal buffer area; (2) adopt Option 3(b) (expand program area by adding 384 blocks in deep-water for sales in 1999 in the deep-water portion of the program area and in 2001 in the program area) from the proposed program; (3) adopt Option 3(a) (expand program area by adding 384 blocks in deep water for a sale in 2001 in the program area) from the proposed program; and (4) adopt Option 1 (a sale in 2001 in the program area).

They believe that elimination of the three-bid rule will lead to delays in awarding leases and will impair, rather than improve, fair market value determinations. They recommended that MMS adopt a two-bid rule to maximize market forces in fair market value determinations.

They supported MMS's approach of consensus-based decisionmaking as the basis to formulate the 5-year program. They suggested that the proposed program fails to employ this process in the Eastern Gulf due to MMS's endorsement of Florida's objection to leasing within 100 miles of its coast. They also suggested that if meaningful discussions are to take place in a collaborative effort by the affected stakeholders to reach consensus, MMS must provide a level playing field by opening more of the Eastern Gulf to the leasing process.

Chevron stated that they believe that the planning process should have meaningful input from all stakeholders, promote economic resources while protecting the environment, and develop avenues to move forward on leasing in precisely those areas where conflict exists. They encouraged MMS to work to lift leasing and drilling moratoria, complete environmental studies in priority areas, and to actively advocate expanded access to promising areas.

Exxon Exploration Company Exxon Exploration Company enclosed its previous comments dated October 5, 1995, and January 30, 1995, which they indicated were applicable to the proposed program.

Marathon Oil Company Marathon Oil Company incorporated their previous comments by reference and supports Option 3(b) in the proposed program, which expands the area of leasing consideration in the Eastern Gulf of Mexico by adding 384 blocks in deep-water for possible sales in 1999 and 2001. They believe that Option 3(b) should not have any significant impact on the environment since the additional area is far from shore and would be associated with ongoing Central Gulf of Mexico deep-water activities and related infrastructure.

They stated that the increase in rental rates and elimination of the three-bid rule should be reversed and that MMS should rely on market forces to the greatest extent possible as the best indicators of fair market value in issuing OCS leases.

Mobil Exploration & Producing U.S. Inc. Mobil Exploration & Producing U.S. Inc. encouraged MMS to conduct two Eastern Gulf lease sales, one in 1999 in the deep-water portion of the expanded program area and one in 2001 in the entire expanded program area (Option 3 in the proposed program). Recent bidding in OCS Sale 157 demonstrated the high level of interest in deep-water, and leasing activity along the eastern edge of the Central Gulf Planning Area was a clear indication of interest in the proposed expanded acreage in the Eastern Gulf. Limitation to deep-water acreage to that included in Option 3 recognized both the Governor of Florida's support for a 100-mile buffer and the Secretary's decision to give greater weight to the policies of adjacent States.

Phillips Petroleum Company Phillips Petroleum Company viewed the current proposal with much disappointment. Not only was the vast majority of the OCS already subject to leasing moratoria, but other promising areas, which were not subject to moratoria, have been excluded from the program. In support of its proposal, MMS argued that it may be all that is doable in view of public opposition in many areas. If so, then before greater leasing access can be offered, public opposition must be overcome. They applauded DOE's statement that "one way to increase the chance of achieving consensus is to increase public knowledge of the important role domestic energy resources play in our Nation's economy and security and the actual level of associated environmental risks." They stated that if public opinion is to be allowed to dictate the course of America's OCS oil and gas leasing program, then government and industry must endeavor to ensure those decisions and choices are made with adequate information. They also incorporated their previous comments by reference.

Shell Exploration & Production Company Shell Oil Company endorsed the comments submitted by the American Petroleum Institute. They referred to their October 6, 1995, comments regarding the return of moratoria areas to the leasing schedule, conflict resolution initiatives, and the linkage of exploration and development rights. They supported continuation of areawide leasing in the Central and Western Gulf. They reiterated their position that tract deletions in these areas must be kept at a minimum.

Since a 100-mile buffer has long been advocated by the State of Florida, Shell believes that there should be no controversy surrounding the offering of all deep-water acreage more than 100-miles off the Florida coast, 26° N. latitude. They oppose the 100-mile buffer on a philosophical basis.

They believe that the competitive forces at play in a sealed bid auction ensure receipt of fair market value and are the best indicators of the true value of a lease. (They oppose the recent change in the three-bid rule.)

Texaco Inc. Texaco supported the continuation of areawide leasing in the Western and Central Gulf Planning Areas. They encouraged a more aggressive leasing program in the Eastern Gulf of Mexico-- specifically the adoption of Option 3(b) in the proposed program. They recommended maintaining a \$25 minimum bid level and continuation of the two-phased bid adequacy process.

They reiterated concerns that the proposed program sets a precedent that it appears to accept State and community resistance to leasing that does not appear to be based on environmental science or legitimate economic concerns.

General Public

The MMS received comments from more than 90 citizens. A large majority of the comments were from citizens in Alabama and Florida. Over 80 percent of these comments opposed OCS leasing and development in the Eastern Gulf of Mexico as did several comments from citizens in other States.

Summary of Program Comments on Draft EIS Public Hearings

The following brief summaries are highlights of programmatic comments *only* given at public hearings on the draft EIS for the Proposed Oil and Gas Leasing Program for 1997-2002. Specific comments on sections of the draft EIS will be addressed in the final EIS accompanying this document.

Gulf of Mexico Region

Houston, Texas (March 26, 1996) Four industry representatives from Phillips, Unocal, Chevron, and Marathon submitted public testimony. Phillips stated that the draft EIS should have emphasized the advances in oil and gas technology; emphasized stringent regulations in place; highlighted oil-spill contingency plans; and emphasized positive economic impacts of offshore leasing. Unocal supported annual sales in the Central and Western Gulf of Mexico and the proposed Alaska sales. Unocal and Chevron supported two sales in the Eastern Gulf (Alternative 5 in the draft EIS). Unocal and Marathon recommended that necessary funding be available to allow studies that are a prerequisite for specific sales to occur. Chevron and Marathon stated that the areas for study should be funded based on the level of industry interest. Marathon suggested that a second priority of funding should be the areas covered by the President's June 1990 OCS statement. Chevron suggested building consensus through stakeholder involvement in the Eastern Gulf especially in considering the area within 100-miles of the Florida coast. Marathon generally supported the proposed program except preferring annual sales beginning in 1999 in the Eastern Gulf and requested a predictable and reliable 5-year leasing schedule.

New Orleans, Louisiana (March 27, 1996) One industry representative submitted public testimony on behalf of Shell, the Offshore Operators Committee, and the American Petroleum Institute. The Offshore Operators Committee supported the proposed program. The American Petroleum Institute stated that DOI needed to continue consensus building among stakeholders. They suggested a task force approach in the Eastern Gulf. They recommended annual sales in the Eastern Gulf as early as possible (starting in 1998), or at least two sales as early as 1998 and 2001. The DOI should consider extending areas of leasing consideration further south in the Eastern Gulf around existing leases. They advocated impact assistance to affected States based on acreage leased and amount of production.

Mobile, Alabama (March 28, 1996) A representative of Governor Lawton Chiles of Florida submitted public testimony on his behalf reiterating Florida's position of opposing any offshore leasing within 100- miles of its coast. The Governor was pleased that the proposed program recognizes the need to protect Florida's coastal and marine resources by establishing, at a minimum, a 100-mile buffer off their coast. The Governor was concerned with the environmental effects of production from existing leases and does not believe that the State should risk leasing off Florida's coast for the sake of 0.5 percent of the Nation's estimated natural gas reserves. The State reiterated its position of supporting development of alternative renewable fuels.

A representative of Senator Connie Mack of Florida read a letter at the hearing addressed to Secretary of the Interior Bruce Babbitt stating that the Florida Congressional delegation is attempting to extend the ban on drilling off southwest Florida to the entire coast of Florida. A representative of Congressman Joe Scarborough (R-Florida, First Congressional District) testified that Congressman Scarborough opposes drilling off Florida's coast and the entire Eastern Gulf. Congressman Scarborough stated that until selected studies are completed and results are available, no decisions should be made regarding possible leasing off Florida's coast. The Congressman is committed to extending the current moratorium and making it permanent in the Eastern Gulf and the east and west coasts. The Congressman has also cosponsored a resolution for a moratorium off Florida's coast until after the OCS Program for 1997-2002.

Many members of the Gulf Coast Environmental Defense testified opposing leasing within 100 miles of Florida's coast. They stated that studies showing the impact of offshore drilling have not been completed. They oppose leasing off Alabama's coast since it is so close to Florida's coast that it may be inconsistent with Florida's coastal zone management plan. They (and Gulf Coast members of Zero Population Growth) stated that alternative energy should be emphasized. The Safari Club and Florida First representatives both opposed leasing off Florida.

Overall, over 80 percent of citizens who testified opposed leasing in the Eastern Gulf. Several were concerned with active leases off the Florida Panhandle and the impact of drilling on the social and human environment of the Florida coast. Some oppose nearshore rigs that are visible in tourist areas. Many are concerned with deteriorating pipeline infrastructure and the effects of dumping drilling muds and cuttings on offshore rigs as well as other metal

toxins and their effect on marine life. Most citizens testified against leasing off Florida's coast generally stating that the environmental risks outweigh the benefits.

Those who testified in favor of the proposed program were industry respondents (see Houston and New Orleans testimony above). The Offshore Operators Committee supported the proposed program and Alternative 5 in the draft EIS.

Alaska Region

Barrow, Alaska (with teleconference to Point Hope, Point Lay, Wainwright, Kaktovik, and Nuiqsut) (March 21, 1996) Citizens that submitted public testimony generally were concerned about potential oil spills and cleanup technology in the Arctic OCS. In Point Lay and Point Hope, citizens who testified opposed a Chukchi Sea/Hope Basin sale. They were mostly concerned that offshore development would affect the migration routes of marine mammals, particularly beluga whales, that oil spills could affect habitat and cleanup capability in ice. In Wainwright, those who testified opposed offshore leasing in the Chukchi Sea and Hope Basin due to oil-spill potential and the effect on the migration of marine mammals and sea birds. In Kaktovik, the Kaktovik Inupiat Corporation opposed leasing from Demarcation Point (near the Canadian Border in the Beaufort Sea) to the Hope Basin area. They requested a deferral from leasing in the Kaktovik area due to the possibility of oil spills from offshore development and effect on the caribou. The Mayor of Kaktovik recognized the conflict between offshore leasing and the diverse biological resources in the Arctic OCS. The Mayor requested that DOI extend the Barter Island deferral at least 50 miles west of Barter Island. The Mayor was concerned with the adequacy of oil-spill cleanup and is supportive of impact assistance for localities affected by offshore development. The Mayor stated that onshore drilling is preferable to offshore drilling in this area.

The Vice Mayor of Nuiqsut testified that Nuiqsut opposes Beaufort Sea Sale 144 in the current 5-year program. Nuiqsut, the Kuukpiik Village Corporation, and Kupiiq Corporation oppose Sale 144 unless a new deferral area is created for the Colville Delta and Cross Island breeding grounds. In Barrow, several citizens testified about offshore development's negative impact on their subsistence culture. The Barrow Whaling Captain's Association testified opposing leasing in the Chukchi and Beaufort Seas. They do not think that oil-spill cleanup techniques are adequate for broken ice conditions. They also expressed concern over effects on their subsistence lifestyle; that the mainstay of their food comes from the Chukchi and Beaufort Seas, including bowheads, walrus, bearded seal, eider ducks, brants, and fish, but are primarily concerned with bowheads. They stated that the subsistence uses for all marine mammals, land animals, and migratory waterfowl and fish must be protected so that the future use of these subsistence resources will continue for their residents who depend on these resources to maintain their traditional Inupiat customs and culture.

The Arctic Slope Native Association Limited testified and requested seasonal restrictions to avoid interference with subsistence activities. They were encouraged by mitigating measures developed for Beaufort Sea Sale 144. They supported impact assistance, especially to communities where subsistence activities are affected by offshore development. They are opposed to offshore development and believe onshore development is safer in the Arctic. They also were concerned with seismic effects on subsistence bowhead activities in Kaktovik, Nuiqsut, and Barrow and the need for adequate oil-spill cleanup technology in the Arctic. The North Slope Borough stated that they have repeatedly expressed concerns about the ability to clean up spilled oil in broken-ice conditions and effects of drilling operations on the bowhead whale subsistence hunt. They preferred onshore drilling rather than offshore but are pleased with the mitigating measures that MMS worked closely on with the Borough for Sale 144. They requested that DOI work closely with people that have accumulated indigenous scientific knowledge through the years.

Homer, Alaska (March 28, 1996) All private citizens who testified opposed further offshore development in Cook Inlet. Some of those who testified cited the risk of oil-spills and questioned the effectiveness of oil spill cleanup technology, especially with the weather conditions and tides in Cook Inlet and Shelikof Strait. Several citizens testified opposing both the current Cook Inlet sale (Sale 149) and the proposed sale in the next 5-year program, Sale 173. Several citizens stated that the government needs to shift emphasis to alternative energy development instead of fossil fuels. Others stated they want to preserve and maintain the lifestyle and primary economic base of the Homer community, particularly tourism, recreation, and fishing, and that any offshore leasing in Cook Inlet is not compatible with their lifestyle.

The Cook Inlet Keeper Program stated that water quality in Cook Inlet is crucial and that the Federal Government is not listening to the people of Cook Inlet in continuing to propose offshore leasing in Cook Inlet. They requested that proposed Sale 173 in the new 5-year program be deleted. They advocated alternative energy development instead of developing fossil fuels.

One industry respondent testified that the potential number of oil spills in the draft EIS were inflated and the proposed program document downplayed oil and gas technology advances.

Yakutat, Alaska (April 3, 1996) A citizen testified opposing leasing in the Gulf of Alaska due to impacts on subsistence lifestyles. The Mayor of Yakutat testified supporting consideration of leasing in the Gulf of Alaska for the proposed program. The Mayor stated that consideration of leasing in this area gives Yakutat an economically prospective option in the future.

Anchorage, Alaska (with teleconference with Port Graham) (April 9, 1996) Greenpeace testified that the DOI should not move forward with proposed sales in the new program until the sales in the current 5-year program are resolved. They cited lack of proven oil-spill prevention and cleanup technology. They oppose offshore development due to concerns of indigenous and commercial fishing communities who depend on subsistence hunting and fishing of marine resources. They were pleased that the DOI has eliminated the North Aleutian Basin for leasing consideration. They also stated that Alaska continues to bear an unfair burden in the national OCS program and that decisions have been inconsistently applied despite the comparable or greater lack of adequate physical oceanographic, ecological, sociocultural, and economic information than OCS areas outside of Alaska.

A citizen, representing the people of the Village of Port Graham, stated that Port Graham is opposed to proposed sales in Cook Inlet/Shelikof Strait and the Gulf of Alaska due to impacts on their subsistence lifestyles, the need for protection of its cultural heritage, and the effects of oil spills, which will disrupt or destroy their subsistence lifestyle. They requested that, if leasing proceeds, industry be responsible for providing oil-spill prevention and cleanup material to their communities, and provide training of local citizens to assist in cleanup efforts.

Kivalina, Alaska (April 11, 1996) A representative of the Alaska Regional Stakeholders Task Force from this area stated that the community is concerned about oil-spill technology in this area. Another citizen testified that people are concerned about the impact of offshore development on migrating mammals. He stated that oil-spill cleanup technology is a serious concern. He stated impacts on the Inupiat culture and experience of village elders should be critical components in any leasing decisions. He also requested that the southern section of the Chukchi Sea/Hope Basin be deleted from leasing.

Several citizens and a representative of the Maniilaq Association reiterated concerns with leasing in the Chukchi Sea/Hope Basin and remained generally opposed to offshore leasing in this area. Comments ranged from concerns with changing whale migration patterns, their dependence on subsistence hunting and maintaining their traditional culture and lifestyle, to the effects of oil-spills and lack of oil spill cleanup capability. They stated that if this area is not deferred from the 5-year program, it is important that MMS work closely with the affected communities throughout the process, recognize that the local people have the expert knowledge of the area through their traditional hunting experience with whales, and include their expert knowledge in their decision process.

Alaska Regional Stakeholders Task Force Meeting Summary

On May 6, 1996, the Task Force agreed that the recommendations included in the original task force report remained valid. The Alaska Regional Stakeholders Task Force met to determine if the Task Force wanted to make any additional recommendations on the proposed 5-year oil and gas leasing program, taking into consideration public comments on the program. They made three additional recommendations listed below. Detailed minutes of this meeting are incorporated in the Record for this 5-year program and are available on request. A summary of this Alaska Regional Stakeholders Task Force Meeting has also been incorporated in the Record. This summary was distributed at the May 22, 1996, OCS Policy Committee Meeting in McLean, Virginia, and is also available on request. Issues raised in the May 6, 1996, meeting were discussed during earlier Task Force meetings and were used in developing the original Task Force recommendations. These issues are reviewed below.

ADDITIONAL RECOMMENDATIONS

- o Endorse MMS efforts to incorporate traditional knowledge and expand analyses of effects to marine mammals, as recommended by the North Slope Borough, the Alaska Eskimo Whaling Commission, and others.
- o Continue to have MMS review existing prevention and response technology for oil spills and discharges and to develop incentives to encourage improvements where necessary.
- o Review existing mechanisms to compensate communities (subsistence and other resource users) in the event of an oil spill and make recommendations for changes in law (i.e., Oil Pollution Act of 1990) or regulations as necessary to expedite compensation.

REVIEW OF ALASKA REGIONAL STAKEHOLDERS TASK FORCE ISSUES

- o One new member proposed that there should not be leasing in the Chukchi Sea or Hope Basin, predominantly due to oil-spill issues. Another member questioned if Cook Inlet would be included in the next 5-year program if the proposed Cook Inlet Sale 149 was canceled. Much of the following discussion as outlined below reviewed the same issues and concerns that went into the original Task Force recommendations to include the Chukchi Sea/Hope Basin and Cook Inlet in the 5-year program.
- o One member questioned if it were possible to reduce proposed sale size to focus or reduce issues and concerns. This issue was deferred for discussion on MMS's proposal to streamline the prelease process.
- o One member questioned if the 5-year program was the proper place to address "acceptable level of risk." Another member noted examples where industry was resistive to adoption of prevention standards (tug escorts and zero discharges in Cook Inlet) and noted that they would continue to oppose offshore leasing until progress had been made in adopting prevention measures. Another member noted that industry does continuously evaluate prevention technology, as does the MMS, and that some groups would continue to oppose the program regardless.
- o Several members reflect continuing concerns that oil-spill response technology (particularly in broken-ice conditions) is not adequate or been demonstrated. Other members reflected that a tremendous amount of planning, money, and research has gone into developing oil-spill response capabilities. One member indicated that industry never did an oil spill response demonstration in the Arctic even after being asked, and that response technology is not up to par on the North Slope. Another member noted the extensive testing and demonstrations had been conducted during the Tier II efforts in the early 1980's. Another member noted the drills conducted in Cook Inlet, which have had community involvement and for which reports are prepared and circulated. Other members reflected that there are limits to mechanical cleanup and that several groups recognize and support in situ burning as an alternate technology.

- o Most members indicated that an oil-spill mitigation fund needs to be created and accessible. The current process for compensation from damages is too lengthy and complicated for immediate access by the affected communities. One member stressed that “minority” subsistence users should be treated fairly along with other users, the industry, and agencies. Another member indicated that there needed to be an assessment of what mechanisms are already available (Federal and State) and then identify areas that needed to be improved or changed.
- o Many members reiterated that subsistence is not a *cash* economy. The group was reminded that at the recommendation of the Task Force, Delbert Rexford (Special Assistant to the Mayor, North Slope Borough) had addressed the OCS Policy Committee on native subsistence ways of life. Another member noted that local knowledge is not being used and that local people are being replaced (employment is going to nonlocal people).
- o Several members were complimentary to MMS’s outreach and community meeting efforts.
- o A number of members indicated the need to include tribal interests in the process and that the MMS had a legal and moral obligation to implement the Executive Order on Environmental Justice. Some members raised the point that the Federal Government has responsibilities to establish government to government relations with tribes and noted the EPA Tribal Operations Committee as an example. It was noted that one of the members did represent tribal interests for selected Native villages; that member noted that he could not speak for or represent other tribal interests. Another member noted that there were many tribal issues throughout the Nation, many unresolved issues in Alaska and tribal issues related to land ownership, which was not the same issue as the OCS. Other members reflected that tribal interests should be included in the process regardless of land status or ownership. The MMS noted that it was implementing the Executive Order on Environmental Justice.
- o All members agreed that oil-spill prevention technology is important. Several members noted that while response preparedness is important, there needed to be more emphasis on the prevention aspects of oil and gas activities.
- o One member indicated that the same concepts regarding oil-spill prevention should also be applied to other pollution aspects of oil and gas activities. One member noted that there should be zero discharge (in Cook Inlet). Other members thought there was and should be a distinction between oil-spill prevention versus other pollution issues. It was also noted that discharges are subject to EPA regulation and that discharges should be addressed as a lease sale specific issues.
- o Several members indicated the need to develop incentives that encouraged industry to develop and adopt better oil-spill prevention measures. One member noted that prevention technology is well established, as demonstrated by the existing record. One member noted that such incentives should apply to other sources of pollution as well.
- o One member noted that the Alaska coastal area is a complex biological system and that annual productivity as used in the decision document is not a good measure for comparison among regions. The member also noted that these systems needed protection in advance.
- o One member noted that the current decision document is based on conventional economics and should be expanded to include ecological economics (sustainability/ecological costs). Another member strongly opposed this idea, noting that this is a controversial issue and not an accepted approach. It was again noted that the 5-year program looks at the broad issues.

- o It was clarified that proposed sales in the next 5-year program will be subject to individual lease sale process, which would include scoping to better focus industry interest (and sale configuration) and other lease sale specific issues.

APPENDIX 2

ECONOMIC ANALYSIS FOR THE 5-YEAR PROGRAM

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ECONOMIC ANALYSIS FOR THE 5-YEAR PROGRAM

Introduction

The Minerals Management Service (MMS) performs an analysis of the economic and social value of resources in all program areas to compare the benefits associated with Outer Continental Shelf (OCS) oil and natural gas production with the resulting costs to society. There are two parts to this analysis, using consistent, but different, sets of resource estimates. In compliance with the requirements of section 18 of the OCS Lands Act, the MMS performs a *relative ranking* of the value of the resources in those portions of those planning areas considered for leasing in the program proposal and various options. The relative ranking of these *program areas* is based on the (arithmetic) mean estimate of *all* economically recoverable resources anticipated to be unleased and undiscovered (i.e., available for leasing) as of July 1997. In addition, the MMS uses the same methodology and some additional assumptions to estimate and compare the value to society of the program proposal and of the other program options. Production anticipated to result from the proposal or specific options (i.e., only a portion of the available program area resources) is considered in the second part of the analysis.

The first part of the analysis focuses on the relative value of program areas, rather than of the proposal, and thus compares the value of the available resources in the seven program areas in the proposal and the additional program areas considered in other options. To allow program areas to be compared equally, the assumption is made that all available resources in each program area are leased simultaneously. The relative ranking allows the Secretary of the Interior to compare the net benefits of leasing in the various program areas without the distorting effects of assumptions necessary to estimate the potential benefits of any given schedule.

The second part of the analysis, referred to as the *valuation of program alternatives*, switches from a comparison of program areas to a comparison of the program proposal with the other explicit options. For ease of comparison, the proposal and options are consolidated into the five alternative schedules, including *no action*, analyzed in the programmatic EIS. This analysis requires some additional assumptions, because the value of each program alternative is based on factors such as the number of sales held in each area; the location and quantity of the resources leased and discovered; and the timing of lease sales, exploration, development, and production. This estimation of the relative value of program alternatives allows the Secretary to compare more carefully the potential benefits of the Proposed Program decision and other explicit options considered in the Proposed Final Program analysis.

The ensuing section covers the statutory and judicial basis for performing the economic analysis. Next is a section on the resource estimation methodology, followed by a section on the conceptual basis for the methodology and the basic assumptions used throughout the analytical process, and then by a series of sections covering the main components of the economic analysis. The final section shows the results of both the ranking of program areas based on available resources and the valuation of program alternatives based on anticipated production.

Statutory Basis and Judicial Interpretation of Economic Analysis

Section 18(a) of the OCS Lands Act (43 USC 1344) requires the Secretary to prepare, revise, and maintain a 5-year program consisting of a lease sale schedule. Among other things, this schedule is to be based on a consideration of the economic values of the nonrenewable resources of the OCS. The 5-year program for 1997-2002 will be the fifth prepared by the Department of the Interior. The first three programs prepared and approved under section 18 were challenged in court. The ensuing decisions issued by the U.S. Court of Appeals for the District of Columbia decided all of those lawsuits, which are cited in part II.D of the main text of this decision document. Those decisions have provided important guidance for program preparation, including points specifically relating to economic analysis, and they are well documented in the decision documents prepared for preceding 5-year programs (see the April 1992 SID for the 5-year program for 1992-1997). The analysis for the

5-year program for 1997-2002 is being conducted in accordance with those established interpretations of the statute.

Estimates of Available Hydrocarbon Resources

Calculations of net benefits for the relative ranking of program areas start with estimates of the economically recoverable hydrocarbon resources anticipated to be available for leasing in each program area as of July 1997. Estimating the undiscovered hydrocarbon resource base is a difficult task because of the various uncertainties associated with the process. The existence and amount of hydrocarbon accumulations are not known until actual exploration drilling occurs. The only information regarding the possible existence of hydrocarbons is derived from analogs, extrapolations, and geologic interpretations. Once initial judgments are made concerning the existence of hydrocarbons, determinations must be made regarding what portion of the existing hydrocarbons are likely to be recoverable using existing conventional technology and what portion of those “conventionally recoverable” resources could be profitably produced at various resource price levels. In areas subject to intervening sales (under the current 5-year program), further judgments must be made as to the resource-bearing blocks likely to be leased and, thus, “unavailable” by July 1997.

Seismic data, especially 3-D seismic, provide clues to the existence, locations, and areal extent of possible hydrocarbon-bearing structures. However, without geologic information from drilling, no real data will be available regarding types of reservoir rocks, source rocks, geopressure, and geochemistry of potential prospects. As a result, until drilling occurs, an exact accounting of the amounts and areal extent of any hydrocarbon resources is virtually impossible.

The estimates of undiscovered crude oil and natural gas resources of the OCS areas were obtained from the new National Assessment, a multiyear study by the MMS carried out concurrently with an effort by the U.S. Geological Survey (USGS) that assessed the undiscovered oil and natural gas resources of the onshore areas of the United States and adjacent waters within the boundaries of the coastal States. The results reflect information and data available to the MMS through January 1, 1995. The current assessment estimates the undiscovered, conventionally recoverable oil and natural gas resources located outside of known oil and gas fields on the OCS. The assessment considers recent geophysical, geological, technological, and economic information and uses a play analysis approach of resource appraisal called the Geologic Resource Assessment Program (GRASP). (A brief explanation of the GRASP model can be found in appendix 2 of the February 1996 Proposed Program decision document.)

The 1996 assessment began with the geologic analyses of the OCS areas using the extensive library of public and proprietary data available to MMS assessors. These include seismic data and interpretations, well log data and interpretations, petrophysical and geochemical data, geologic maps and cross sections, and a vast array of additional data and information available to the MMS through its Federal regulatory responsibilities for OCS resource management. In cases where data were not available or were sparse, geologically analogous areas were studied and the geologic properties of these areas were used. These analyses resulted in the identification of specific geologic plays that form the basis of this assessment.

For the purpose of the current assessment, the geologic plays are classified into three groups based on the level of exploration and discovery history:

- Established Plays
- Frontier Plays
- Conceptual Plays.

The general methodology of assessing oil and natural gas resources for the three types of plays using GRASP is very similar. A simplified flow diagram detailing the assessment process is presented in figure 2-1. The basic steps are listed below.

1. Compilation of play data.
2. Generation of prospect (pool) size distribution from probabilistic distribution of reservoir parameters.
3. Generation of a number-of-pools distribution.
4. Determination of individual oil, natural gas, and mixed pool sizes by rank.
5. Establishment of individual pool size rank conditional to discovery data.
6. Generation of play potential resources distribution.

In recognition of the differences in the extent of data and information available among the OCS areas—attributable mostly to the degree of past exploration and development activities—some variances in the use of GRASP modules and procedures were incorporated. The frontier and conceptual plays, where available data are sparse and good analogs not identified, are analyzed through the subjective probability method used by GRASP. In this method, individual distributions of input variables are subjectively prepared and through GRASP, ranked pool size distributions are generated. Most plays in the Alaska OCS were analyzed this way. In the case of frontier plays, where the assessors feel confident that an analog exists, such as in the Atlantic OCS, the analysts can generate a pool size distribution from the statistical parameters of the appropriately scaled ranked pool size distribution of the analog plays and estimate the play resources using GRASP. For established plays in the Gulf of Mexico, where significant amounts of pool data are available from discovered fields, a pool size distribution curve for a play can be generated from the distribution of discovered pools.

The estimates of undiscovered oil and natural gas resources attributed to basins, provinces, regions, or other areas are derived through statistically aggregating the play level potential resource distributions of the plays comprising that area.

The ranked pool size distributions (generated by GRASP) and the geologic risk factors are the basic geologic inputs into the economic model named PRESTO (Probabilistic Resources Estimates Offshore). The costs of exploration, development, and transportation, as well as tariffs based on logical exploration, development, production, and transportation scenarios, were estimated for each OCS region, province, play, or other operational subarea where activities, costs, or other circumstances warrant. Estimates of economically recoverable resources were then derived for a specific price by (1) subjecting each pool size distribution in a play or other aggregation to multiple computer iterations simulating the drilling of the hydrocarbon prospects associated with the plays; (2) determining which pools and sizes are simulated to be discovered on each iteration; and (3) developing a discounted cash-flow analysis for the pools' discovered resources using specific economic parameters. The resources that exceed the economic hurdles are then totaled and become one data point on the price-supply curve. The process is repeated for numerous prices, and a price-supply curve is generated.

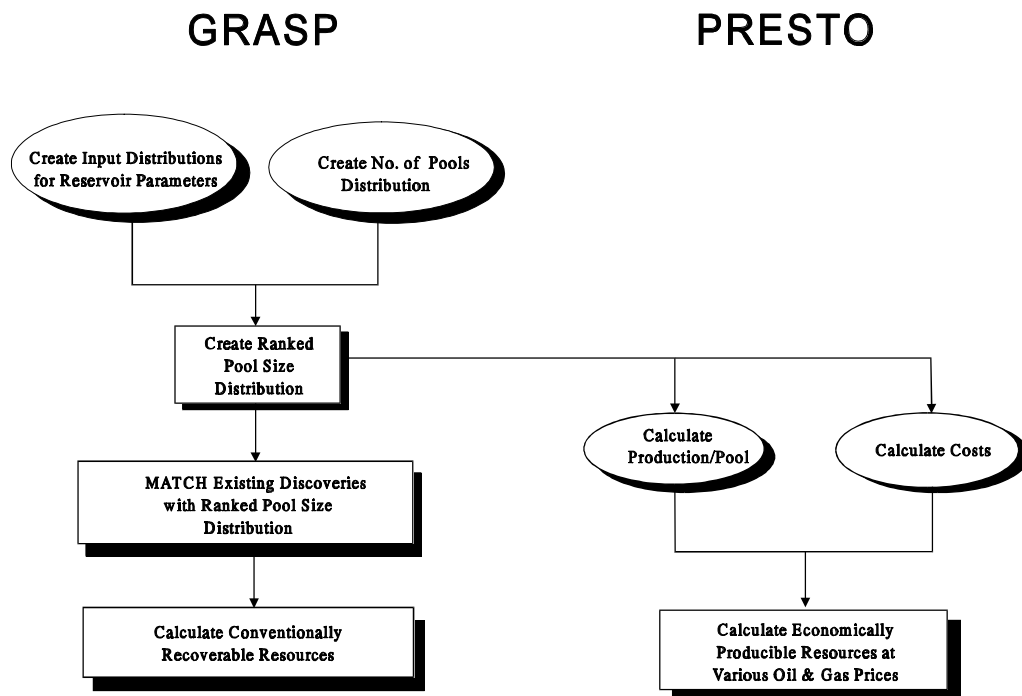


Figure 2-1. MMS National Assessment Process

The economic evaluation for the National Assessment considered stacked plays (i.e., plays that overlie other plays at different depths) in the Gulf of Mexico, the Atlantic, and certain portions of the Pacific OCS Region in order to prevent overly conservative estimates. In these areas, the concurrent exploration, development, and production of pools in these plays was appraised. The specific procedures used will be presented in the National Assessment Regional Reports.

The National Assessment estimates of undiscovered economically recoverable OCS oil and natural gas resources were developed using the following criteria:

- flat prices (no real price changes)
- 12-percent discount rate (after tax rate-of-return)
- 12.5- or 16.7-percent royalty rate
- 35-percent Federal income tax rate
- 3-percent inflation rate (inflation was applied and then removed in order to properly account for the effect of depreciation on large capital investments)
- natural gas prices related to oil prices at 66-percent of the oil-equivalent
- exploration, development, and transportation costs and associated schedules specific to OCS regions and portions of regions when conditions warrant.

The uncertainties in estimating undiscovered resources are such that program decisions need to be based on consideration of more than a single set of estimates, especially in the case of estimates for unproven areas or other high-risk areas, such as those on the Alaska OCS. First, potential lessees can have different interpretations of the data or different assumptions about prices, costs, or geologic conditions. Such differences could provide very different estimates of resource values. Second, while the mean, risked, economically recoverable resource estimates are the most appropriate on which to base the comparison of program areas, no single set of estimates presents a complete picture of the resource potential in each area. When considering whether to bid for, and later whether to explore, a tract or group of tracts, a company is likely to consider estimates along the entire probability distribution, ranging from the minimum it can expect to find to the upper limits of what resource quantities may be present. In an area with no hydrocarbon discoveries, the estimates of eventual production—should commercial quantities actually exist—could be much higher than risked estimates, which are reduced to reflect the possibility that no economically recoverable hydrocarbons exist there. The whole of Saudi Arabia and, more recently, Prudhoe Bay were once dismissed by most geologists as unlikely to yield any viable hydrocarbon discoveries. Thus, any exploration results from such areas would provide valuable information about resource potential there, and any frontier areas in which industry has an interest should receive serious consideration.

Tables 2-1 and 2-2 help to demonstrate the ways in which these uncertainties could influence a potential bidder's assessment of each program area. Table 2-1 provides estimates of *conventionally* recoverable resources at the mean and 5-percent probability cases for the program areas in the proposed schedule. (Probability is expressed in terms of the likelihood that at least a certain quantity exists, so the 5-percent probability case is a high resource estimate.) These estimates include resources that would not be produced under anticipated price and cost conditions but that would be considered by potential bidders in determining their bidding plans. For example, the table shows the enormous resource potential in the Chukchi Sea/Hope Basin, under the right conditions. This potential is not reflected proportionately in the estimates of benefits—or even in the economically recoverable resource estimates—because of the high-cost, high-risk conditions in that area. A commercial discovery and the development of infrastructure would show the true resource amounts to be closer to the high estimates, while aggressive exploration with negative results would decrease estimates of recoverable resources.

Table 2-2 provides estimates of economically recoverable resources at the mean of the distributions under an \$18- and a \$30-per-barrel price assumption. These are the estimates used in the cost-benefit analysis for the relative ranking of program areas. A comparison of the base case and high-price case estimates in table 2-2 provides information on the sensitivity of the estimates to changes in assumptions about future prices.

The resource estimates shown in tables 2-1 and 2-2 represent the results of resource simulations and assumptions about the leasing results of intervening sales in the Central and Western Gulf of Mexico, Cook Inlet, and Beaufort Sea under the current 5-year program. If actual results of intervening sales for the four affected program areas differ from current assumptions, or if sales are deferred or canceled, the estimates of available resources and anticipated production for those areas could change. Because MMS analysis indicates that, without the development of supporting infrastructure, the resources in the portion of the Beaufort Sea east of Barter Island are marginally economic or subeconomic under current conditions, the resource estimates for the Beaufort Sea would not be affected appreciably by selection of the Barter Island deferral option for Sale 144, nor would they be affected by selection of the options to exclude 416 or 500 blocks in this area from the Final Program. (Therefore, only one set of estimates is shown for the Beaufort Sea in table 2-2.) However, the assessment of conventionally recoverable resources in that part of the program area indicates that its importance to the overall resource inventory of the Beaufort (geological) province could change dramatically in the event of nearby discoveries and development, construction of new pipelines into the eastern Beaufort, higher oil prices, and other changing conditions.

Table 2-1. Estimated Program Area Conventionally Recoverable Hydrocarbon Resources (as of July 1997)

Program Area	Oil (BBO)	Gas (Tcf)
Central Gulf of Mexico	2.84 3.05	39.98 41.65
Western Gulf of Mexico	2.35 3.79	32.35 34.98
Eastern Gulf of Mexico	0.11 0.13	1.48 2.32
Beaufort Sea	6.14 8.73	31.32 56.99
Chukchi Sea/Hope Basin	13.80 23.26	61.69 168.68
Cook Inlet	0.30 0.75	0.65 1.20
Gulf of Alaska	0.54 1.23	3.43 8.68

Mean estimates are shown first, with the 5-percent probability estimates underneath. Not all conventionally recoverable resources would be produced under the price assumptions in this analysis.

Table 2-2. Estimated Economically Recoverable Hydrocarbon Resources Available as of July 1997

Areas in the Program Proposal	Oil (BBO)	Gas (Tcf)
Western Gulf of Mexico—map 10	1.47 1.83	19.46 24.56
Central Gulf of Mexico—map 10	1.69 2.29	24.17 31.81
Eastern Gulf of Mexico—map 11	0.04 0.08	0.66 1.04
Beaufort Sea—map 4	0.85 1.70	None
Chukchi Sea/Hope Basin—map 7	1.19 3.00	None
Cook Inlet/Shelikof Strait—map 8	0.12 0.27	0.18 0.40
Gulf of Alaska—map 9	0.05 0.12	None
Alternative Areas		
Eastern Gulf of Mexico—map 12	0.04 0.09	0.74 1.19
Eastern Gulf of Mexico—map 14	0.01 0.03	0.27 0.53
Eastern Gulf of Mexico—map 15	0.01 0.04	0.35 0.68
Mid-Atlantic—map 16	0.00 0.01	0.35 0.54

Base Case estimates (\$18 per bbl and \$2.11 per Mcf) are shown first, with High Case estimates (\$30 per bbl and \$3.52 per Mcf) underneath.

The areas in the program proposal are described and considered under Option 1 in this decision document, and the alternative areas are described and considered under the options cited in corresponding maps and in the final EIS. See part III.A of this document for maps and descriptions of the program options and EIS alternatives.

Conceptual Basis and Assumptions for the Economic Analysis

The MMS performs a cost-benefit, or *net benefits*, analysis of the value of all available oil and gas resources in the areas considered for leasing in the Proposed Final Program. This analysis examines the benefits and social costs associated with OCS oil and natural gas production. The basic section 18 analysis includes a comparison of the net benefits (gross benefits minus gross costs) associated with the unleased, undiscovered OCS oil and natural gas resources in each program area. The relative rankings of program areas based on these quantified estimates provide one factor considered in determining the location and timing of lease sales in the program. In addition, the

MMS performs a second analysis comparing the net benefits of the program proposal with those of other options—grouped according to the five EIS alternatives.¹

In general, cost-benefit analysis focuses on the microeconomic (market-specific) benefits and costs associated with projects or programs. Complete consideration of the microeconomic measures must encompass both supply and demand sides. When appropriate, net macroeconomic (national income) benefits also may be considered. The net macroeconomic benefits of OCS oil and gas activities are hard to quantify accurately, so no specific estimates are presented in this analysis.

On the supply side, the cost-benefit analysis of OCS leasing begins with an estimate of gross revenue from oil and natural gas production in the program area. For the relative rankings, this estimate consists of all available resources times the price assumed to hold in the market at the time of production. In the valuation of program alternatives analysis, the estimate is anticipated production times price. The MMS subtracts from gross revenue the cost of exploring, developing, producing, and transporting the resources to market to get *net economic value* (NEV).

In addition to private costs, OCS development imposes environmental and social costs. The MMS estimates these and subtracts them from NEV. The result is called *net social value*. Net social value is a more or less complete estimate of net microeconomic benefits on the supply side. In economic terms, net social value is a measure of net economic rent or net producer surplus from society's point of view.

For the 5-year program for 1992-1997, the MMS limited the main portion of its net benefits analysis to net social value but estimated demand-side benefits (consumer surplus) in a separate section labeled, "Analysis of Additional Benefits and Costs of the Program." While the results of the demand-side benefit calculations are not yet as reliable as those of the net social value estimates, the MMS now has sufficient confidence in the validity of those estimates to include them in the basic analysis for this program.

Consumer surplus is the name economists give to net demand-side benefits associated with a project or program.² Consumer surplus benefits are not directly related to the costs associated with production and thus are not necessarily proportional to net economic value or net social value. For example, the Chukchi Sea is thought to have huge quantities of oil. If produced, the high per-barrel cost of that oil would be reflected in a somewhat low net social value but not in the consumer surplus value. The MMS calculates the consumer surplus benefits associated with OCS oil and gas production and adds them to the estimates of net social value. This sum of supply- and demand-side net benefits constitutes the total microeconomic net benefits associated with the available resources in each program area or the anticipated production from each EIS alternative.

¹Those interested in the economic theory underlying the discussion and analysis in this appendix should see King, William E. *Economic Analysis for the 5-Year Program for 1997-2002: Theory and Methodology*. U.S. Department of the Interior, Minerals Management Service, 1996. Available from the Minerals Management Service Technical Communication Services and from the MMS homepage on the Internet (<http://www.mms.gov>).

²Consumer surplus for an individual is the difference between the total value of a good (the maximum price the consumer would pay rather than do without it) and the lower price actually paid for it, given adequate supply and other conditions. Consumer surplus for products as important and widely used as oil and gas can be quite large in the aggregate. The concept is explained in most basic microeconomic textbooks. Application to OCS oil and gas is described in much greater technical detail in appendix 6 of the April 1992 SID and in King (1996) (See footnote 1 for full citation).

**Available Undiscovered, Economically Recoverable Resources
(or Anticipated Production) ***

**x Assumed Price
= Gross Revenue**

Gross Revenue

**- Private Costs (except transfers to Government)
= Net Economic Value (NEV)**

NEV

**- Environmental and Social Costs
= Net Social Value (Net Supply-Side Benefits)**

Net Social Value

**+ Consumer Surplus Benefits (Net Demand-Side Benefits)
= Net Microeconomic Benefits**

Figure 2-2. Components of the Net Benefits Analysis

*The estimates for the relative ranking analysis are based on all resources anticipated to be available for leasing in each program area as of July 1997. The estimates for the valuation of program alternatives are based solely on anticipated production under each EIS alternative.

The final component of the MMS's net benefits analysis is consideration of the macroeconomic benefits potentially accruing to society from the production of OCS oil and gas. If OCS production has even the most minute impact on the U.S. price of oil or natural gas, then, because the U.S. economy spends so much of its resources on these products, this production would affect national income (the macroeconomy).

The MMS has continued development work on a model to estimate this macroeconomic effect for oil. In contrast with the consumer surplus estimates, the accuracy of any estimates of macroeconomic benefits for OCS oil and gas activity would be so questionable that it would be inappropriate to include them in the net benefits analysis, especially for use in comparing one program area with another. Therefore, macroeconomic benefit estimates are not included in figure 2-2, which summarizes the quantitative components of the MMS economic analysis, or in any of the tables displaying the results of the analysis.

Program areas (or program options) shown by the analysis to have larger net benefits are more attractive from an economic perspective. Similarly, any program area with positive net benefits is suitable for inclusion in the program schedule from an economic point of view. However, the estimates obtained in cost-benefit analyses of future activities are fraught with significant margins of error. More importantly, economics provides only a single perspective on the program decision. Consideration of the margin of error and other valid considerations (many of which are required by law), such as industry interest, may lead decisionmakers to choose options that would not appear to yield the largest net benefits, such as excluding program areas estimated to have positive net benefits or including areas estimated to have negligible, or even negative, net benefits.

Considerable uncertainty surrounds future production from the OCS and resulting impacts on the economy. A broad range of future conditions can result from a lease sale schedule. To be useful, an analysis must be both specific and realistic, which is difficult in the face of uncertainty. Price expectations play an especially important role in estimating the value of program alternatives. Frontier areas could prove more interesting to industry if future prices are higher than those clearing markets at the present time. In response to this price

uncertainty, the MMS has chosen to identify a pair of likely scenarios of the future. The Base Case is a low-to-moderate price scenario that might be thought of as the most likely. In other words, no other scenario is more likely than this one, and, indeed, most other scenarios appear to be less likely. The High Case is a plausible high-price scenario, the implications of which the Secretary should consider in deciding on the new schedule.

Scenarios must also be consistent. One of the ways the MMS ensures consistency is to use identical input assumptions in calculating each component of the economic analysis. Indeed, the analysis in the EIS that accompanies the program decision document is based on the same set of assumptions used in the valuation of program alternatives. Four subsets make up the full assumption set for the economic analysis:

- oil and natural gas prices
- discount rate
- available resources or anticipated production estimates
- exploration and development scenarios.

Oil and Natural Gas Prices and Discount Rate

To capture the effects of alternative price paths and volatility throughout the 1997 to 2025 period, the MMS developed both a low-to-moderate (most likely) and a high-price scenario. For the Base Case, the 1997 most likely oil price selected was \$18 per barrel (bbl). This price is consistent with actual worldwide levels following the Persian Gulf War. The price of West Texas Intermediate crude oil averaged about \$17.25 per bbl in 1994, while the refiner acquisition cost of import crude averaged \$15.51. For the High Case, the 1997 oil price is \$30 per bbl, which is consistent with supply and demand factors just before the 1985-86 price decline. Then, the benchmark Saudi Arabian Light crude was selling for \$34 per bbl.

The MMS set the natural gas wellhead price at 66 percent of the oil price on a British thermal unit-equivalent basis. The Base Case natural gas wellhead price is \$2.11 per thousand cubic feet (Mcf) and the High Case price is \$3.52 per Mcf.

In both cases, inflation-adjusted—or *real*—prices are assumed to remain constant throughout the productive life of all leases resulting from the new 5-year program. Price assumptions for the relative ranking and for the valuation of program alternatives are identical.

The MMS reviewed recent studies to determine an appropriate discount rate to use for the economic analysis. The discount rate for the 1992 program analysis was 8 percent. However, trends over the last 10 years have indicated that the real discount, as exemplified by rate of return obtained by industry, has been declining. Thus, based on the studies discussed below as well as the rationale presented in the MMS's April 1992 Secretarial Issue Document, a discount rate of 7 percent has been chosen for the economic analyses conducted in preparing for the 5-year program for 1997-2002.

A study completed by A.T. Guernsey in November 1990 for Shell Oil Company, entitled *Profitability Study: Crude Oil and Natural Gas Exploration, Development, and Production Activities in the USA, 1959-1988*, concluded that profitability has fluctuated along with industry's ability to anticipate the future economic environment. The real (after-tax) rate of return averaged about 4 to 7 percent per annum from 1959 through 1979. The economic environment for the years 1980-1988 is now perceived to have been poorer than contemplated at the time investments were made, resulting in a rate of return averaging between a negative 3.5 percent and a positive 0.5 percent per annum. This study suggests that real, after-tax discount rates for the industry currently average between 4 and 8 percent.

A December 1992 National Petroleum Council Report entitled *The Potential for Natural Gas in the United States* (Department of Energy) reference case used a 4-percent real after-tax marginal rate of return. The Council's example calculations of after-tax equity rates of return for integrated companies fell between 4 and 6 percent and

between 3 and 5 percent for independents. These minimum rates of return were an extension of the work done by A.T. Guernsey for the Shell study.

Finally, in March 1995, William L. Randol of Salomon Brothers International testified before the U.S. Senate, Committee on Energy and Natural Resources regarding the flight of capital from the U.S. petroleum industry. Randol's investigation showed a 5-year average return on investment for a representative group of seven major oil companies to be 7.3 percent during the period 1989-1993. If ARCO is excluded, the 5-year average return on investment for the remaining six companies drops to 6.3 percent. This suggests that a discount rate around 7 percent for the economic analysis is reasonable.

Anticipated Production

While table 2-2 displays all unleased, undiscovered (*available*), economically recoverable hydrocarbon resources as of July 1997 for the relative ranking of program areas, the valuation of program alternatives is based solely on production anticipated under the new program—the amount of oil and natural gas estimated to be produced as a result of the lease sales included in the program proposal and the other program options. The estimates of anticipated production, along with the exploration and development scenarios, are included in table 2-3 for the program proposal and table 2-4 for EIS Alternatives 3, 4, and 5 (which are the various program options grouped together as comprehensive *alternatives*.) Leasing risk, discussed below, was not considered in development of anticipated production for Alaska OCS program areas; that aspect of risk was incorporated in estimates of the economic values shown in later tables.

Options that would eliminate entire program areas or that would not change program area resource estimates are not represented in table 2-4. These are the options under EIS Alternative 4 to exclude the Gulf of Alaska and Eastern Gulf of Mexico from consideration, as well as the Barter Island exclusion options and the option to delete the Hope Basin portion of the Chukchi Sea/Hope Basin program area (the MMS assumes that any activities anticipated for the Hope Basin would shift to the Chukchi Sea portion of the program area). As mentioned above in reference to the Barter Island exclusion options, one should not assume that the exclusion of a portion of a program area is costless just because it does not change the resource estimates for that area. In some cases, subeconomic resources become economically recoverable when there are other nearby discoveries that can help support the necessary infrastructure.

In the valuation of program alternatives, the probability of development and production occurring as a result of proposed sales was considered. In areas with current production (i.e., the various Gulf of Mexico program areas), the estimates of anticipated production as a result of the Proposed Final Program were based on observations of activities from past sales. In frontier areas, without a history of development and production, estimating anticipated production from a sale is more difficult than is the case in areas that are actively producing. Stochastic models are used to develop estimates of resources within a program area, but the estimate of anticipated production as a result of one or two specific sales is a matter of professional judgment.

For a specific schedule of sales in a frontier area, in addition to geologic and economic risk, other sources of risk must be considered as well. These other sources of risk include the probability that no companies bid at the sale; companies bid, but not on tracts with enough resources to support production; companies that are awarded the best tracts hold the leases, but do not explore; companies explore, but do not find enough resources to warrant production; and companies find economically recoverable resources, but decide to invest in established areas that seem to offer higher risk-adjusted rates of return rather than in frontier areas. The estimation of the additional sources of risk is based on professional judgment that considers past sales in frontier areas, the results of exploration activity, and market conditions consistent with the economic assumptions of the program for 1997-2002.

The additional sources of risk for frontier areas are used in calculating the net benefits for the program alternatives to account for the fact that the outcome of any specific sale, especially in frontier areas, is uncertain. While it is

possible that all the resources within a program area could be leased in a sale, leasing lesser quantities is also a possibility. The other sources of risk are used in the economic analysis to scale the frontier area results so that they are more comparable to results for actively producing program areas. As discoveries are made in the frontier areas and resources are developed and produced, the sources of risk used in the economic calculations would decline.

Exploration and Development Scenarios

Associated with various levels of production are activities and facilities related to exploring for and developing subsurface resources. The list of these activities and facilities is called an exploration and development scenario. These activities and facilities produce oil and gas, cost money, and cause environmental and social impacts. Table 2-3 shows for each program area the combined anticipated production and exploration and development scenario used for the Base and High Cases in the valuation of program alternatives for the program proposal (Alternative 1).

Table 2-3. Anticipated Production and Exploration and Development Scenario for the Program Proposal

Variables	GULF OF MEXICO			ALASKA			
	Western	Central	Eastern	Beaufort	Chukchi/ Hope	Cook Inlet	Gulf of Alaska
No. of sales	5	5	1	2	1	1	1
Anticipated production-oil (BBO)	0.03 0.43	0.76 2.19	0.03 0.06	0.85 1.70	1.19 3.00	0.12 0.27	0.05 0.12
Anticipated production-gas (Tcf)	2.83 9.67	7.65 21.93	0.50 0.81	none	none	0.18 0.40	none
Years of activity	40	40	40	35	40	25	25
No. of platforms	10 - 40	70 - 210	5 - 8	2 - 4	3 - 8	1 - 3	0 - 1
No. of exploration & delineation wells	20 - 115	185 - 540	15 - 30	6 - 11	13 - 31	4 - 9	2 - 4
No. of development & production wells	65 - 355	515 - 1495	20 - 30	61 - 118	139 - 348	39 - 88	0 - 26
Pipeline miles	550- 1150	650- 1450	100 - 300	56 - 86	265 - 410	165 - 200	0 - 30
No. of landfalls	5	5	0	1	3	1	1
No. of shore bases	6	7	0	0	2	0	1

In tables 2-3 and 2-4, leasing risk (e.g., lack of success in lease sales or exploration, decisions not to develop discoveries) is not reflected in anticipated production for Alaska OCS program areas. Net benefit estimates incorporate leasing risk for all program areas.

Table 2-4 shows those production and exploration and development scenarios that would change under Alternatives 3, 4, and 5. Alternative 3 would slow the pace of leasing so that there would be only three sales each

in the Central and Western Gulf of Mexico program areas and only one sale in the Beaufort Sea program areas. Other sales and scenarios would remain the same. Alternative 4 would eliminate from consideration the Gulf of Alaska program area and all (Alternative 4A) or the nearshore portion (Alternative 4B) of the Eastern Gulf of Mexico program area. It also would exclude all or part of the area east of Barter Island in the Beaufort Sea and would exclude the Hope Basin from the Chukchi Sea/Hope Basin program area. The MMS assumes that any activity that would take place in the Hope Basin under Alternative 1 would shift to nearby portions of the Chukchi Sea under Alternative 4. The nearshore-block exclusion for the Eastern Gulf of Mexico (Alternative 4B) is the only exclusion option that would modify the estimates shown for the program proposal in table 2-3. Alternative 5 would enlarge the Eastern Gulf program area for consideration of one lease sale (Alternative 5A) or two sales (Alternative 5B) and would also consider a program area in the Mid-Atlantic for one lease sale. Under Alternative 5B, one sale would be held in 1999 for deep-water blocks only and the other would be held in 2001 for the entire expanded area.

Table 2-4. Anticipated Production and Exploration and Development Scenario for Alternatives 3, 4, and 5

Variables	Alternative 3			Alternative 4B	Alternative 5		
	GULF OF MEXICO		ALASKA	GULF OF MEXICO	GULF OF MEXICO		ATLANTIC
	Western	Central	Beaufort	Eastern	Easter n(A)	Easter n(B)	Mid-Atlantic
No. of sales	3	3	1	1	1	2	1
Anticipated production-oil (BBO)	0.02 0.26	0.46 1.31	0.50 1.02	0.01 0.03	0.03 0.06	0.03 0.07	0.00 0.00
Anticipated production-gas (Tcf)	1.70 5.80	4.59 13.16	None	0.26 0.50	0.53 0.86	0.59 0.97	0.23 0.35
Years of activity	40	40	35	40	40	40	40
No. of platforms	6 - 25	45 - 125	1 - 3	3 - 5	6 - 8	7 - 9	2 - 3
No. of exploration & delineation wells	15 - 70	110 - 325	3 - 9	10 - 20	20 - 30	20 - 30	5 - 10
No. of development & production wells	40 - 215	310 - 900	37 - 71	15 - 25	20 - 35	25 - 40	15 - 20
Pipeline miles	330 - 690	390 - 870	34 - 52	150 - 400	100 - 350	150 - 500	200 - 300
No. of landfalls	3	3	1	0	0	0	1
No. of shore bases	3	3	0	0	0	0	1

In tables 2-3 and 2-4, leasing risk (e.g., lack of success in lease sales or exploration, decisions not to develop discoveries) is not reflected in anticipated production for Alaska OCS program areas. Net benefit estimates incorporate leasing risk for all program areas.

Alternative 4A would remove the entire Eastern Gulf of Mexico program area from consideration, while Alternative 4B would retain all but 22 nearshore blocks. Alternative 5A would expand the deep-water portion of the program area but retain the one sale in 2001, while Alternative 5B would both expand the area and add a sale in 1999 for deep-water blocks.

Net Economic Value

Overview

The NEV is the difference between the discounted gross market value of available hydrocarbon resources (or anticipated production) and the discounted real cost of exploring, developing, producing, and transporting the product to market. For each program area, the NEV was calculated using appropriate exploration and development scenarios and production profiles. The U.S. Government (the lessor) collects a portion of the NEV as transfer payments in the form of cash bonuses, rentals, royalties, and taxes. The remainder of the NEV is retained by the lessees (private firms) as economic profits.

NEV Analysis

The NEV of the available resources and of the program alternatives is calculated using a discounted cash-flow model called NEVPLUS.

The technique used for the economic analysis involves calculating the gross value of available program area resources, or of anticipated production, based on anticipated oil and gas prices. The gross value of the available resources or the anticipated production is then discounted so that values can be expressed in terms of a July 1997 program starting date. Likewise, the costs of exploration, development, production, and transportation (excluding transfer payments) are calculated and discounted back to 1997. The discounted costs are then subtracted from the discounted gross resource value. This difference represents the NEV, as of 1997, for the program areas considered. The NEV's for individual program areas are not necessarily proportional to available resources or to anticipated production because NEV takes into account rates of production dependent on geologic and engineering conditions, and the associated production costs, which vary significantly from program area to program area.

Table 2-5 shows the estimates of NEV for the available resources in the seven program areas in the program proposal—as well the Eastern Gulf of Mexico as modified in EIS Alternatives 4 and 5 and the Mid-Atlantic, included in Alternative 5—calculated using the NEVPLUS model. Table 2-5 shows only one set of estimates for the Beaufort Sea because (in the absence of commercial discoveries in other nearby areas) the estimates of resources likely to be economically recoverable would not be affected by selection of the Barter Island deferral option for intervening Sale 144, nor would they be affected by selection of the options to exclude 416 or 500 blocks in this area from the Final Program. Table 2-6 shows NEV's based on anticipated production for program areas in the proposal and Alternatives 3 through 5. Table 2-7 shows the sum of the NEV's for each of the EIS alternatives.

Table 2-5. Summary of Estimated Net Benefits of Producing Available Program Area Resources

Areas in the Program Proposal	Net Economic Value	Environmental and Social Costs	Net Social Value	Consumer Surplus Benefits	Net Microeconomic Benefits
Western Gulf of Mexico	\$12,800.0 \$28,040.0	(\$0.8) (\$1.3)	\$12,799.2 \$28,038.7	\$1,647.0 \$3,344.0	\$14,446.2 \$31,382.7
Central Gulf of Mexico	\$14,590.0 \$33,850.0	(\$38.3) (\$62.2)	\$14,551.7 \$33,787.8	\$1,961.0 \$4,246.0	\$16,512.7 \$38,033.8
Eastern Gulf of Mexico	\$230.0 \$760.0	(\$5.5) (\$11.1)	\$224.5 \$748.9	\$28.0 \$81.0	\$252.5 \$829.9
Beaufort Sea	\$2,880.0 \$15,880.0	(\$28.9) (\$38.7)	\$2,851.1 \$15,841.3	\$1,582.0 \$3,781.0	\$4,433.1 \$19,622.3
Chukchi Sea/Hope Basin	\$750.0 \$10,060.0	(\$16.4) (\$40.8)	\$733.6 \$10,019.2	\$648.0 \$2,700.0	\$1,381.6 \$12,719.2
Cook Inlet/Shelikof Strait	\$520.0 \$2,500.0	(\$1.2) (\$3.0)	\$518.8 \$2,497.0	\$165.0 \$472.0	\$683.8 \$2,969.0
Gulf of Alaska	* \$570.0	* (\$20.1)	* \$549.9	* \$160.0	* \$709.9
Alternative Areas					
Eastern Gulf of Mexico—map 12	\$250.0 \$900.0	(\$5.5) (\$13.1)	\$244.5 \$886.9	\$30.0 \$92.0	\$274.5 \$978.9
Eastern Gulf of Mexico—map 14	\$20.0 \$280.0	\$2.6 \$4.1	\$17.4 \$275.9	\$10.0 \$37.0	\$27.4 \$312.9
Eastern Gulf of Mexico—map 15	\$40.0 \$420.0	\$2.6 \$6.1	\$37.4 \$413.9	\$12.0 \$48.0	\$49.4 \$461.9
Mid-Atlantic—map 16	* *	* *	* *	* *	* *

All figures in the table are in millions of 1997 dollars. Base Case estimates (\$18 per bbl and \$2.11 per Mcf) are shown first, with High Case estimates (\$30 per bbl and \$3.52 per Mcf) underneath.

The areas in the program proposal are described and considered under Option 1 in this decision document and Alternative 1 in the final EIS. The alternative areas are described and considered under the options cited in corresponding maps and under Alternatives 4 and 5 in the EIS. See part III.A for maps and descriptions of the program options and EIS alternatives.

*Net economic value is considered negligible. Assuming no exploration or other activity, social costs would not be incurred, and there would be no net social value or consumer surplus benefits.

Table 2-6. Valuation of Program Area Net Benefits in the Program Proposal and Alternatives 3, 4, and 5

Program Areas	Net Economic Value	Environmental & Social Costs	Net Social Value	Consumer Surplus Benefits	Net Microeconomic Benefits
Alternative 1					
Western Gulf of Mexico	\$1,110.0 \$9,850.0	(\$0.6) (\$1.4)	\$1,109.4 \$9,848.6	\$132.0 \$1,024.0	\$1,241.4 \$10,872.6
Central Gulf of Mexico	\$5,110.0 \$28,050.0	(\$17.5) (\$36.2)	\$5,092.5 \$28,013.8	\$755.0 \$3,560.0	\$5,847.5 \$31,573.8
Eastern Gulf of Mexico	\$140.0 \$590.0	(\$4.2) (\$7.9)	\$135.8 \$582.1	\$22.0 \$64.0	\$157.8 \$646.1
Beaufort Sea	\$820.0 \$7,560.0	(\$2.3) (\$9.1)	\$817.7 \$7,550.9	\$270.0 \$1,830.0	\$1,087.7 \$9,380.9
Chukchi Sea/Hope Basin	\$90.0 \$8,100.0	(\$1.3) (\$10.8)	\$88.7 \$8,089.2	\$161.0 \$2,176.0	\$249.7 \$10,265.2
Cook Inlet/Shelikof Strait	\$30.0 \$1,440.0	(\$0.1) (\$0.6)	\$29.9 \$1,439.4	\$17.0 \$231.0	\$46.9 \$1,670.4
Gulf of Alaska	* \$170.0	* (\$5.0)	* \$165.0	* \$55.0	* \$220.0
Alternative 3					
Western Gulf of Mexico	\$670.0 \$5,910.0	(\$0.4) (\$0.9)	\$669.6 \$5,909.1	\$81.0 \$634.0	\$750.6 \$6,543.1
Central Gulf of Mexico	\$3,070.0 \$16,830.0	(\$10.3) (\$20.2)	\$3,059.7 \$16,809.8	\$459.0 \$2,193.0	\$3,518.7 \$19,002.8
Beaufort Sea	\$480.0 \$4,340.0	(\$1.5) (\$5.4)	\$478.5 \$4,334.6	\$162.0 \$1,139.0	\$640.5 \$5,473.6
Alternative 4B					
Eastern Gulf of Mexico	\$20.0 \$270.0	(\$2.6) (\$3.9)	\$17.4 \$266.1	\$10.0 \$35.0	\$27.4 \$301.1
Alternative 5					
Eastern Gulf of Mexico (1 sale)	\$150.0 \$610.0	(\$5.2) (\$8.0)	\$144.8 \$602.0	\$23.0 \$65.0	\$167.8 \$667.0
Eastern Gulf of Mexico (2 sales)	\$160.0 \$680.0	(\$6.4) (\$8.1)	\$153.6 \$671.9	\$25.0 \$75.0	\$178.6 \$746.9
Mid-Atlantic	* *	* *	* *	* *	* *

All figures in the table are in millions of 1997 dollars. Base Case estimates are shown first, with High Case estimates underneath. Options in Alternatives 3 through 5 that would exclude entire areas or would not change the estimates for the program proposal are not shown. (Alternative 4B would retain for consideration all but that portion of the Eastern Gulf of Mexico within 15 miles of shore.)

* Net economic value is considered negligible. Assuming no exploration or other activity, social costs would not be incurred, and there would be no net social value or consumer surplus benefits.

Table 2-7. Valuation (Net Benefits) of Program Alternatives

Program Areas	Net Economic Value	Environmental & Social Costs	Net Social Value	Consumer Surplus Benefits	Net Microeconomic Benefits
Alternative 1 (Program Proposal)	\$7,300.0 \$55,760.0	(\$26.0) (\$71.0)	\$7,274.0 \$55,689.0	\$1,357.0 \$8,940.0	\$8,631.0 \$64,629.0
Alternative 2 (No Action)	\$0.0 \$0.0	\$0.0 \$0.0	\$0.0 \$0.0	\$0.0 \$0.0	\$0.0 \$0.0
Alternative 3 (Slow the Pace of Leasing)	\$4,480.0 \$37,380.0	(\$17.8) (\$50.7)	\$4,462.2 \$37,329.3	\$902.0 \$6,491.0	\$5,364.2 \$43,820.3
Alternative 4a (Exclude Some Areas)	\$7,160.0 \$55,000.0	(\$21.8) (\$58.1)	\$7,138.2 \$54,941.9	\$1,335.0 \$8,816.0	\$8,473.2 \$63,757.9
Alternative 4b (Exclude Some Areas)	\$7,180.0 \$55,270.0	(\$24.4) (\$63.2)	\$7,155.6 \$55,206.8	\$1,344.0 \$8,848.0	\$8,499.6 \$64,054.8
Alternative 5A (Lease Additional Areas)	\$7,310.0 \$55,780.0	(\$27.0) (\$69.9)	\$7,283.0 \$55,710.1	\$1,357.0 \$8,940.0	\$8,640.0 \$64,650.1
Alternative 5B (Lease Additional Areas)	\$7,320.0 \$55,850.0	(\$28.2) (\$70.7)	\$7,291.8 \$55,779.3	\$1,359.0 \$8,950.0	\$8,650.8 \$64,729.3

All figures in the table are in millions of 1997 dollars. Base Case estimates are shown first, with High Case estimates underneath. Alternative 4A excludes all of the Eastern Gulf of Mexico from consideration; Alternative 4B retains all but that portion within 15 miles of shore. Alternative 5A would expand the deep-water portion of the Eastern Gulf of Mexico but retain the one sale in 2001, while Alternative 5B would both expand the program area and add a sale in 1999 for deep-water blocks.

Environmental and Social Costs

Overview

The net economic value assessment considers the private costs, except for transfer payments to the Government, incurred by the firms that discover and develop OCS oil and natural gas resources. In addition, society incurs environmental and social costs from the activities and facilities associated with OCS oil and natural gas production. These costs take a variety of forms, and the MMS has organized the environmental and social costs associated with OCS activities into 14 categories:

- Air Quality

- Water Quality
- Spill Avoidance and Response
- Infrastructure
- Fishing Ground Preemption and Gear Loss
- Wetlands
- Property Values
- Oil-Spill Control and Cleanup
- Recreation and Tourism
- Commercial Fisheries
- Wildlife
- Subsistence
- Legal
- Administrative and Research.

The categories were chosen to highlight issues the public identified as important with respect to the OCS leasing program.

Costs associated with oil spills constitute the major portion of the total costs that society can be expected to bear. The environmental effects of oil spills and the costs associated with those effects vary widely depending on variables such as the amount and type of oil spilled, the location of the spill, the sensitivity of the ecosystem affected, weather, and season.

Fortunately, the environmental and social costs associated with oil spills have been relatively well documented so there is a fairly rich basis for oil-spill cost modeling in the literature. Nevertheless, modeling efforts are usually limited to assessing the effects of an *average* event like an oil spill. In the case of the analysis performed for this report, the estimates are for the aggregate costs of all the spills that the model suggests would most likely result from producing available resources or from anticipated production from the program options.³ This approach cannot and does not try to measure the effects of any individual spills, nor does it consider the unlikely event of a catastrophic spill of unprecedented proportions.

If OCS oil and, to a lesser extent, natural gas are not produced, imports of foreign oil will increase substantially. Most of this oil would be imported by tanker, entailing risks of oil spills and environmental costs. The environmental costs associated with these increased imports are subtracted from the environmental costs associated with OCS production to arrive at an estimate of the net environmental and social costs associated with OCS activities. To ensure consistency, the same model is used to estimate imports that would substitute for OCS production as is used to estimate consumer surplus benefits, to develop the no action scenario, and to support the energy alternatives evaluation.

General Purpose Environmental Cost Model

The MMS has adopted the General Purpose Environmental Cost Model (GPECM) for estimating environmental and social costs associated with OCS activities. As the name implies, the GPECM is designed to perform a multitude of functions: estimate environmental and social costs of OCS activities, estimate environmental and social costs of imports that would substitute for OCS production, and estimate the OCS-related environmental and social costs that planning areas (and nearby coastal areas) would incur even if the development occurred elsewhere.

³The estimates for the valuation of program alternatives and for the regional costs in the equitable sharing section are based on production anticipated to result from the program proposal and from the EIS alternatives.

The GPECM is designed to model the impact of typical activities associated with OCS production and typical oil spills occurring on the OCS. This model is not designed to represent the impacts of extraordinarily large oil spills nor impacts on unique resources such as endangered species. (The reader is referred to the EIS accompanying this document for assessment of the effects of catastrophic events and impacts on unique resources.) Decisionmakers are cautioned that the environmental and social costs included in this analysis are not necessarily all the costs that might be associated with the program proposal and other options, although the MMS attempted to assess accurately costs that could reasonably be expected.

The GPECM is a 14-sector spreadsheet model. The 14 sectors are the same as those listed above as the categories of environmental and social costs. The model uses production and economic inputs as the basis for its calculations. For the 5-year program for 1997-2002, various sectors, variables, and parameters were updated on the basis of recently published reports about oil spills and environmental costs. The calculations performed for this report are based on estimates of available resources or anticipated production and on economic variables that apply to the 1997-2002 period.⁴

Both the gross environmental and social costs and the costs of replacement imports have been allocated to the program areas on the basis of production. The rationale for this decision is twofold. First, all benefits are allocated to the program areas where the production occurs; therefore, it would be inconsistent to do otherwise for costs. Second, and more importantly, if benefits and costs are not allocated to the area of production, it would be nearly impossible to maintain the cause-and-effect link between a decision to lease in a specific program area and the costs and benefits likely to result from that decision. The *regional cost* discussion in the equitable sharing section in part IV.C of the decision document shows an allocation of costs to planning areas in or adjacent to the onshore areas where they are expected to be incurred.

Table 2-5 shows the estimates of net environmental and social costs attributable to total available resources for the seven program areas in the proposal—as well as for the Eastern Gulf of Mexico as modified in EIS Alternatives 4 and 5 and the Mid-Atlantic, included in Alternative 5 in the EIS—calculated using the updated GPECM. Table 2-6 shows net environmental and social costs for anticipated production (by program area), while table 2-7 shows the sums of the net environmental and social costs for each of the program alternatives analyzed in the EIS.

Passive Enjoyment Value

The GPECM does not address loss of passive enjoyment value. Passive enjoyment value, also called passive use or nonuse value, is the benefit people derive from: (1) knowing a natural resource continues to exist in a specific condition; (2) retaining the option to use that resource in the future; and (3) being able to pass the resource to future generations (which may be a subset of (2)). Passive enjoyment value represents an important component of the value of natural resources; however, it is very difficult and extremely expensive to measure accurately. Some economists question whether it can ever be measured accurately. Exacerbating the difficulty and expense of estimating passive enjoyment is the complication imposed on measurement by the vast extent of territory, many program areas, and great diversity of natural resources covered by this program. No reliable estimate of potential passive enjoyment value loss associated with OCS activities exists.

⁴Anyone interested in additional information about the GPECM should see, A.T. Kearney. *Estimating the Environmental Costs of OCS Oil and Gas Development and Marine Oil Spills: A General Purpose Model*. June 1991; available from the Minerals Management Service Technical Communication Services. The GPECM itself, along with the model documentation, is also available to those who want to test the model.

Consumer Surplus Benefits

Overview

Society derives consumer surplus benefits from its ability to purchase commodities made from OCS oil and natural gas, because people can purchase these commodities at less than the maximum price they would be willing to pay for all but the marginal units. Because this phenomenon deals with consumers' reactions to relative prices, it can be described as a demand-side benefit.

The additional oil and natural gas that would be added to the supply stream as a result of the leasing in the 5-year program for 1997-2002 would shift the supply curve for these materials slightly to the right of where it would be without new leasing and subsequent production. Based on empirical evidence that oil and natural gas markets have normal, upwardly sloping supply curves, this shift would result in an increase in society's consumer surplus associated with consumption of these commodities.

Market Simulation Model

The MMS calculates consumer surplus benefits associated with available OCS oil and natural gas or anticipated production using the market simulation model. To maintain consistency, this same model with the same assumptions is used for other portions of the 5-year program analysis.

The market simulation model includes submodels for oil and natural gas. The oil submodel is based on a simultaneous system with four production sectors:

- United States OCS
- United States Domestic Onshore
- Organization of Petroleum Exporting Countries (OPEC)
- Rest of World.

On the consumption side, the oil submodel also has four sectors:

- United States
- Other Organization for Economic Cooperation and Development members
- OPEC
- Rest of World.

The simultaneous system is completed with a world market equilibrium equation. The system is solved using a manually triggered convergence algorithm.

The natural gas submodel is similar to the oil submodel; however, the gas model includes only a single domestic consumption sector and three production sectors:

- United States OCS
- United States Domestic Onshore
- Imports.

This simpler structure is possible because imports constitute a relatively small fraction of U.S. natural gas consumption. Similarly, the market equilibrium equation only applies to a domestic market. A final equation accounting for the difference between wellhead and delivered gas prices completes the

simultaneous system. The natural gas system is solved with a manually triggered convergence algorithm similar to the one used with the oil model.

Each equation in each model includes empirically based parameters to account for the relative slope of the demand and supply curves (elasticities).⁵

The market simulation model follows a series of steps to sum oil and gas values, allocate the consumer surplus over the production period, and take present values. The model allocates consumer surplus to the program areas on the basis of relative production.

The assumptions incorporated in this model, along with the generalized nature of the empirical basis for the parameter estimates, result in a much lower level of accuracy than that associated with the NEV or even the environmental and social cost analysis. The degree of precision is much less than implied by the number of digits displayed in the estimates. Nevertheless, these results should be approximately correct and should influence decisions.

As a measure of demand-side benefits, consumer surplus estimates are based on the amount of energy produced and are not directly affected by the production costs that help to determine NEV (and net social value). Therefore, the proportional relationship between NEV and consumer surplus benefits can vary considerably from area to area. In addition, even for areas with similar production estimates, different production profiles could cause the discounted benefits to vary.

Table 2-5 shows the estimates of consumer surplus benefits attributable to total available resources for the seven program areas in the proposal—and for the Mid-Atlantic and modified Eastern Gulf program areas considered under Alternatives 4 and 5 in the EIS—calculated using the market simulation model. Table 2-6 shows consumer surplus benefits based on anticipated production for program areas in the program proposal and Alternatives 3 through 5. With one exception, the estimates for Alternative 4 are the same as those for Alternative 1, less the values for the Eastern Gulf of Mexico and Gulf of Alaska program areas. Alternative 4B contains an option to retain for consideration all but 22 partial or whole nearshore blocks in Eastern Gulf of Mexico program area. Because the Hope Basin and Barter Island exclusion areas in the Beaufort Sea are thought to contain only negligible amounts of economically recoverable hydrocarbons (absent commercial discoveries in nearby areas), options to eliminate them from consideration would not affect the estimates in tables 2-5 through 2-7. Table 2-7 shows the sums of the consumer surplus benefits, aggregated across program areas, for each of the program alternatives.

Macroeconomic Benefits

The United States spends a sizeable percentage of its national income on oil and natural gas. Because of this large expenditure, a shift in the price of these commodities would have measurable effects on the amount of national income available for other goods and services, including investment. These other expenditures, along with potential short-term impacts on the national economy, should show up as resulting shifts in measured national income. (The potential macroeconomic benefits of OCS oil and gas activities are described in greater detail in section III.B.5 of appendix 6 to the April 1992 SID.)

⁵The elasticity estimates used in this analysis are from ICF (1991); however, sensitivity analysis has been performed on the market simulation model using elasticities from the Department of Energy and other sources. (ICF Resources Inc., 1991, *Comparative Analysis of Energy Alternatives*. Available from Minerals Management Service, Technical Communication Services)

The MMS has continued work on a model to estimate the macroeconomic benefits of OCS oil production but has been unable to do so for natural gas because its research has uncovered no estimates of a natural gas-national income elasticity, a key parameter in the macroeconomic effect estimation routine. While current estimates indicate that, for the program areas in this analysis, macroeconomic benefits for oil seem to be about one or two times the size of consumer surplus benefits, the model and available data do not yet allow the MMS to confidently estimate the likely effects of any program alternative on the economy. Therefore, no macroeconomic benefit estimates appear in tables 2-5 through 2-7. Further discussion of the model can be found in King (1996). (See footnote 1 for full citation).

Results

Available Program Area Resources

Table 2-5 shows estimated net social value and net microeconomic benefits based on total available program area resources, along with the major components that contributed to the total estimate. Estimates are shown for the Base Case, assuming flat, real prices of \$18 per barrel oil and \$2.11 per Mcf gas, and for the High Case, assuming prices of \$30 per barrel oil and \$3.52 per Mcf gas.

Valuation of Program Alternatives

The purpose of the economic analysis for the new 5-year program is to help the Secretary select the best schedule of proposed sales. In addition to the relative ranking of program areas based on available resources (which helps the Secretary make initial decisions on timing and location), the MMS estimates the benefits and costs associated with the proposed and alternative schedules (which are individual program options grouped together for the EIS analysis). This requires additional assumptions as to the number and timing of sales in each program area, as well as to the amount of resources anticipated to be leased and ultimately produced as a result of each proposed sale. In addition to assumptions about the timing of sales, the MMS develops exploration and development scenarios and production profiles to determine when any discovered resources would be produced and brought to market.

Using these and the basic assumptions described earlier in this appendix, the MMS sums the various benefits and costs of each program area for each alternative. Those program area-EIS alternative combinations with sums greater than zero have positive net benefits and are thus appropriate for inclusion in the leasing program from an economic point of view. It should be remembered that decisionmakers can and must bring to their decisions other valid points of view besides economics. In other words, positive net benefits should not be the sole criterion for selecting any particular option or for including or excluding a program area from the leasing schedule.

Table 2-6 shows the estimates of net benefits for program areas from the program proposal and from Alternatives 3 through 5, as well as the totals for each of the categories of benefits and costs that went into calculating the net benefits. Only those program areas with values that vary from one alternative to another are shown.

Because each of the categories of benefits for each alternative is calculated in comparison to the *No Action* Alternative (Alternative 2), the *No Action* Alternative has no benefits or costs relative to the other alternatives in any of the benefit categories. While Alternative 2 does have positive net benefits in the environmental and social costs category, these are not shown because they have been included as costs in each other alternative. (While these net benefits are shown in the EIS for illustrative purposes, it would be double counting to both add them to Alternative 2 and subtract them from every other alternative.)

Table 2-7 shows the estimates of total net benefits for each of the program alternatives as well as the totals for each of the categories of benefits and costs that went into calculating the net benefits.

The Program Proposal (Alternative 1)

In Alternative 1, Gulf of Mexico program areas have especially high net benefits regardless of the price scenario examined. Although the Alaska program areas other than the Beaufort Sea have low net economic value in the \$18 per barrel oil price scenario, they have much higher estimated net microeconomic benefits, and they may be of interest to bidders if industry expects higher oil prices in the future—as indicated by the \$30 per barrel estimates—or if industry expects exploration in nearby State waters or onshore areas.

These results suggest that the Gulf of Mexico program areas should be considered for inclusion in the program regardless of future price expectations. In addition, the four Alaska OCS program areas are good candidates for inclusion in the program because they are expected to contain large resource volumes and are estimated to have high net benefits to society at increased price levels. Even if exploration in these areas were unsuccessful, the additional geologic information would enable the Government to more reliably assess the resources on its lands.

Alternative 2— No Action

The selection of Alternative 2 would result in forgoing the opportunity to produce any resources from the program areas considered in Alternative 1 and thus also forfeiting the associated net benefits. The production forgone due to selection of a *No Action* alternative would be replaced by other sources, with imports likely contributing the majority of the forgone oil production and about a third of the gas energy.

Alternative 3— Slow the Pace of Leasing

Alternative 3 slows the pace of leasing so that there would be only three sales in the Central and Western Gulf of Mexico program areas and only one sale in the Beaufort Sea program area during the 1997-2002 program. Elimination of sales in the Central and Western Gulf of Mexico and the Beaufort Sea is estimated to decrease anticipated production by about 40 percent.

Analysis of Alternative 3 shows that the Central and Western Gulf of Mexico program areas would continue to have high net economic and social benefits regardless of the price scenario examined. However, the benefits would be much lower than those attributed to Alternative 1. Although the net microeconomic benefit estimate for the Beaufort Sea program area is lower than its Alternative 1 value, anticipated production from the single sale still would have very high net benefits to society, especially under the \$30 price scenario.

Alternative 4— Exclude Some Areas

Alternative 4 eliminates the sale in the Gulf of Alaska program area, eliminates all (Alternative 4A) or the nearshore portion (Alternative 4B) of the Eastern Gulf of Mexico program area, excludes the Hope Basin from the Chukchi Sea/Hope Basin program area, and eliminates either 416 or 500 blocks east of Barter Island from the Beaufort Sea program area (see maps 5 and 6). Removing the promising nearshore Eastern Gulf blocks from consideration would greatly reduce both available resources and anticipated production—by roughly one-half, depending on the type of resource (oil or gas) and the case (Base or High). However, due to higher infrastructure costs in deep water, the reduction in estimated net benefits would be much greater in the Base Case—by more than 80 percent.⁶ The other exclusions of portions of program areas would not change the estimates shown for Alternative 1. Because the Hope

⁶The estimated net social value for a combination of the nearshore exclusion with the single-sale, expanded-area option in Alternative 5 would be \$26 million (\$37 million total net benefits) in the Base Case—a reduction of about 80 percent from the proposal—and \$286 million (\$322 million total net benefits) in the High Case—a reduction of about 50 percent.

Basin is thought to be gas prone and unlikely to produce economic quantities of oil or gas, the estimated benefits of this alternative would be the same as those for Alternative 1. Similarly, as discussed in part III, above, the resources in the Barter Island exclusions (regardless of the decision whether or not to select the Barter Island deferral for intervening Sale 144) are considered subeconomic due to the lack of nearby infrastructure. However, if successful exploration in and near the eastern Beaufort Sea would justify creation of supporting local infrastructure, the value of these resources would increase (because of the resulting reduction in production and transportation costs).

Aside from the obvious reductions in estimated net benefits, the primary effects of the options in alternative 4 would be to reduce or eliminate a promising source of natural gas (nearshore portion of the Eastern Gulf of Mexico), which the Administration has designated an environmentally preferred fuel, and to postpone or forgo opportunities for exploration in frontier areas (Gulf of Alaska, Hope Basin, and the eastern Beaufort Sea). Any of the options in Alternative 4 would further limit the flexibility of the Secretary to respond to changing conditions.

Alternative 5—Lease Additional Areas

Alternative 5 considers leasing in a larger program area in the Eastern Gulf of Mexico and in a program area in the Mid-Atlantic in addition to the areas included in the program proposal. The larger Eastern Gulf program area would include 384 additional blocks located in deep water and would be scheduled for either one sale (in 2001) or two sales (in 1999 in the deep-water portion only and 2001 in the entire area). The Mid-Atlantic component of Alternative 5 is the same as the leasing proposal that was analyzed for that planning area in the two previous decision documents—a sale in 2000 in a small program area encompassing the former Hudson Canyon Unit off New Jersey, limiting the number of blocks offered at the time of the sale to 50.

The expected net social value of either Alternative 5A (one sale) or Alternative 5B (two sales) for the Eastern Gulf of Mexico would be higher than that of the program proposal, although expected consumer surplus benefits would be about the same. In neither case would the expected ranking among program areas change under either the Base Case or the High Case. The expected net benefits of the Mid-Atlantic option would be negligible under either case. These results, by themselves, do not present a compelling case for either accepting or rejecting Alternative 5.

APPENDIX 3

ESTIMATED APPROPRIATIONS

AND STAFFING REQUIREMENTS

FOR THE 5-YEAR PROGRAM FOR 1997-2002

Estimated Appropriations and Staffing Requirements for the 5-Year Program for 1997-2002

Section 18(b) of the OCS Lands Act, as amended, requires that each 5-year OCS program include an estimate of appropriations and staffing to: (1) obtain information needed to prepare the leasing program; (2) analyze and interpret data and information; (3) conduct environmental studies and prepare EIS's; and (4) supervise lease operations. Table 3-1 presents estimates of the appropriations and staffing that would be necessary to conduct such activities under the 5-year program that has been proposed for 1997-2002 (February 1996 Proposed Program). Estimated staffing levels are for full-time equivalent (FTE) positions.

The 5-year program is presented by calendar year, covering the period July 1997 through June 2002. The estimates of funds and FTE positions in table 3-1 are presented by fiscal year (FY) because that is the unit of time for which agencies of the Federal government receive funding and personnel allocations. Although leasing under the 5-year program for 1997-2002 would not begin until the fourth quarter of FY 1997, table 3-1 includes estimates related to presale preparations that would be expected to take place during the first three quarters of that year. The 5-year program for 1992-1997 provided appropriations and staffing estimates associated with the preparation of this new 5-year program (see appendix 16 of the April 1992 SID), and table 3-1 provides such estimates for preparing the 5-year program for 2002-2007 (assuming that the preparation process for that program will begin in FY 2000).

The estimates provided pertain to the expected funding and staffing needs of the MMS as well as other DOI bureaus and offices. These estimates should be considered as initial approximations of resource requirements that will be subject to change during the appropriations processes conducted each year by the Congress, the Office of Management and Budget, and the DOI. Also, table 3-1 does not attempt to provide estimates for highly speculative and sporadic incidental costs related to consultation with other DOI bureaus during the evaluation and decision process conducted for each scheduled lease sale, nor does it include estimates for other Federal agencies that have regulatory responsibilities associated with the OCS program. Such regulatory responsibilities are not enumerated specifically within section 18(b), and the appropriations and staffing needed to fulfill them are appropriated directly to the accountable agencies.

Table 3-1 presents information according to the categories specified in subsections 1 through 4 of section 18(b). It also includes a General Administration category to cover activities that are not specified in section 18(b) but must be included to fully reflect the cost of managing the pre- and postlease processes required to carry out the 5-year program for 1997-2002.

The development of the 5-year program, the implementation of the various steps of the prelease consultation and planning process, and the oversight of exploration and production activities are an overlapping and continuous process. Thus, the section 18(b) categories do not constitute a direct assessment of how MMS resources are budgeted or used in the administration of the program.

Table 3-1. Estimated Appropriation and Staffing Requirements Proposed Final Program Department of the Interior, Minerals Management Service
(Dollars in Thousands)

FY 1997 *			FY 1998		FY 1999	
Category/Section of Act	Funds	Staff	Funds	Staff	Funds	Staff
I. Resource Information, Section 18 (b) (1):						
Minerals Management Service	3,646.2	35	7,821.2	99	8,106.2	101
U.S. Fish and Wildlife Service						
II. Exploration Data, Section 18 (b) (2)						
Minerals Management Service	3,216.8	46	3,227.8	49	3,227.8	49
III. Environmental Activity, Section 18 (b) (3)						
Minerals Management Service	30,851.4	281	31,536.4	309	32,223.3	366
U.S. Fish and Wildlife Service	400	6	400	6	400	6
National Park Service	33	0.3	62.4	0.7	112	1.2
Office of Environmental Policy & Compliance (DOI)	9.5	0.1	36.5	0.4	37.7	0.4
National Biological Service**	2,600	4	2,600	4	2,600	4
IV. Supervision of Leasing Operations, Section 18 (b) (4)						
Minerals Management Service	2,330.1	19	2,330.1	19	4,270.2	29
U.S. Fish and Wildlife Service						
V. General Administration,						
Minerals Management Service	3,526.7	116	3,155.1	197	3,222.1	190
U.S. Fish and Wildlife Service						
Office of the Solicitor (DOI)	624.4	4	642.8	4	661.7	4
National Park Service	8	0.1	15.6	0.2	28	0.3
Total Requirements						
Minerals Management Service	43,571.2	497	48,070.6	673	51,048.6	734
U.S. Fish and Wildlife Service	400	6	400	6	400	6
National Park Service	41	0.4	78	0.9	140	1.5
Office of Environmental Policy & Compliance (DOI)	9.5	0.1	36.5	0.4	37.7	0.4
Office of the Solicitor (DOI)	624.4	4	642.8	4	661.7	4

* Funding and Staffing provided in this column reflect the same funding level as the FY 1996 House-Senate Conference Appropriations for MMS.

** National Biological Service will be incorporated into U.S. Geological Survey as of October 1, 1996 as the Biological Resources Division.

Table 3-1. Estimated Appropriation and Staffing Requirements Proposed Final Program Department of the Interior, Minerals Management Service
(Dollars in Thousands)

FY 2000			FY 2001		FY 2002	
Category/Section of Act	Funds	Staff	Funds	Staff	Funds	Staff
I. Resource Information, Section 18 (b) (1):						
Minerals Management Service	8,613.8	112	8,876.3	114	7,558.6	92
U.S. Fish and Wildlife Service						
II. Exploration Data, Section 18 (b) (2)						
Minerals Management Service	3,410.9	56	3,410.9	56	2,693.5	47
III. Environmental Activity, Section 18 (b) (3)						
Minerals Management Service	34,292.8	560	33,698.3	507	31,608.6	446
U.S. Fish and Wildlife Service	400	6	400	6	400	6
National Park Service	102.4	1.1	90.4	1	62.4	0.7
Office of Environmental Policy & Compliance (DOI)	47.9	0.5	39.9	0.4	30	0.3
National Biological Service	2,600	4	2,600	4	2,600	4
IV. Supervision of Leasing Operations, Section 18 (b) (4)						
Minerals Management Service	6,308.2	42	6,308.2	42	7,870.4	37
U.S. Fish and Wildlife Service						
V. General Administration,						
Minerals Management Service	8,477.1	209	8,559.7	240	7,764.7	253
U.S. Fish and Wildlife Service						
Office of the Solicitor (DOI)	681.2	4	699	4	719.6	4
National Park Service	25.6	0.2	22.6	0.2	15.6	0.2
Total Requirements						
Minerals Management Service	61,102.8	979	60,853.4	959	57,495.8	874
U.S. Fish and Wildlife Service	400	6	400	6	400	6
National Park Service	128	1.3	113	1.2	78	0.9
Office of Environmental Policy & Compliance (DOI)	47.9	0.5	39.9	0.4	30	0.3
Office of the Solicitor (DOI)	681.2	4	699	4	719.6	4